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THE Journal OF THE IOWA STATE MEDICAL SOCIETY

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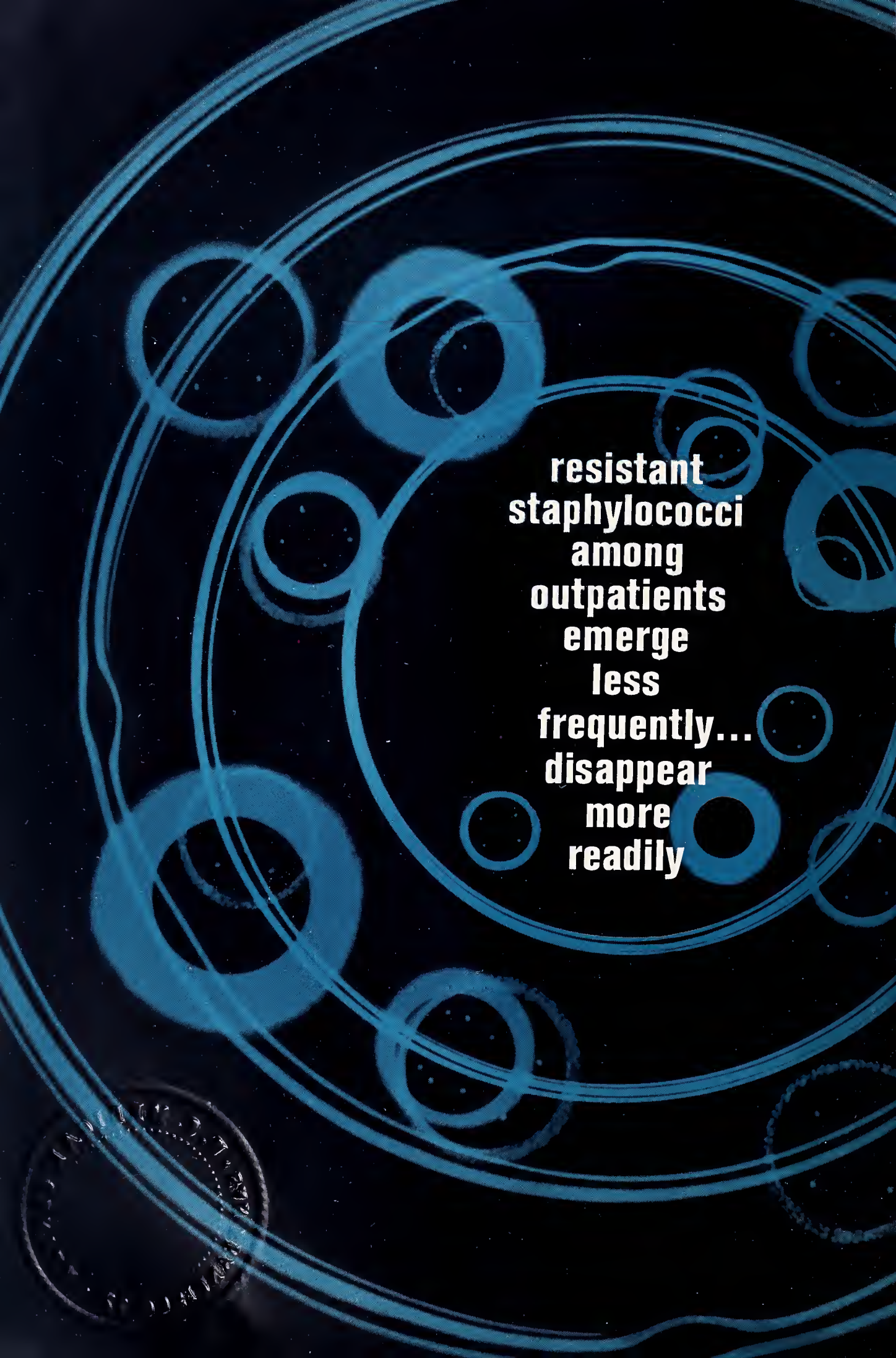
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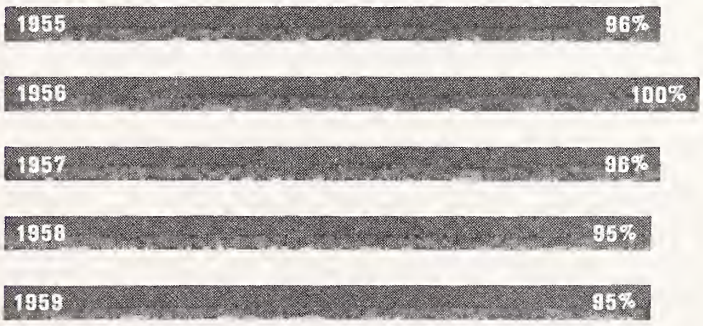
References: (1) Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* 173:475, 1960. (2) Goslings, W. R. O., & Büchli, K.: *Arch. Int. Med.* 102:691, 1958. (3) Goodier, T. E. W., & Parry, W. R.: *Lancet* 1:356, 1959. (4) Fisher, M. W.: *Arch. Int. Med.* 105:413, 1960. (5) Petersdorf, R. G., *et al.*: *Arch. Int. Med.* 105:398, 1960. (6) Glas, W. W., in Symposium on Antibacterial Therapy, Michigan & Wayne County Acad. Gen. Pract., Detroit, September 12, 1959, p. 7. (7) Modarress, Y.; Ryan, R. J., & Francis, Sr. C. E: *J. M. Soc. New Jersey* 57:168, 1960. (8) Rebhan, A. W., & Edwards, H. E.: *Canad. M. A. J.* 82:513, 1960.

IN VITRO SENSITIVITY OF COAGULASE-POSITIVE STAPHYLOCOCCI TO CHLOROMYCETIN FROM 1955 TO 1959*



These sensitivity tests were done by the disc method on 310 strains of coagulase-positive staphylococci. Strains were isolated from patients seen in the emergency room. It should be noted that among inpatients, resistant strains were considerably more prevalent.

*Adapted from Bauer, Perry, & Kirby[1]

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Journal of the IOWA STATE MEDICAL SOCIETY

Vol. LI JANUARY, 1961 No. 1

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The Therapeutic and Training Program at The Glenwood State School

PETER A. PEFFER, M.D., Superintendent

GLENWOOD STATE SCHOOL was established in 1876 in a converted orphans' home, and some of its present buildings date back to that time. The newest structure there is the Meyer Academic School, a very fine building that was erected in 1953. There are now approximately 1,600 patients housed in 52 wards, or in other words, there are 52 different classifications of patients consisting of males and females ranging from babyhood to old age. Presently, there is a waiting list of approximately 140, and the waiting period for admission is about 1½ years. The current staff numbers 533, and there are 17 jobs unfilled.

The School operates a 1200-acre farm and orchard, it maintains a dairy, it manufactures its own electric light and power, it has its own water supply and sewage disposal plant, it runs its own laundry and its own bakery, and during the growing season it operates a canning factory. The institution's present patient-day cost is running between $3.90 and $4.00.

A RECENT REORGANIZATION

In order that you may have a background for an understanding of our program at Glenwood, I think it necessary to sketch for you the principal features of Iowa's current mental health program. On December 20, 1956, a governor's study committee submitted a set of proposals. I shan't go into detail about its many recommendations, except to tell you in a general way about what has transpired with regard to the four Mental Health Institutes. Each of them at that time was overcrowded, had insufficient personnel—especially professional people—and had upward of 1,400 patients. The discharge rate was about 40 per cent, and since the Institutes had no great expectations of getting increased appropriations, the only way they could improve their programs was to reduce their patient capacities and use the resultant savings in an effort to finance the hiring of additional professional personnel. This, they did. As a result, each of the Mental Health Institutes now has 1,000 or fewer patients. The discharge rate has been raised to the vicinity of 80 per cent, and there are no waiting periods for admission. In addition, the Institutes have been able to set up outpatient teams to make follow-up examinations of patients who have been transferred to county homes and nursing homes, and to treat them if necessary.

Now this same assignment has been given to the two institutions for the retarded, namely Woodward and Glenwood. It is expected that Glenwood and Woodward will reduce their capacities to 1,350 each within a two-year to five-year period. Also, we are to reduce our waiting time for admission to a period no longer than 90 days.

At Glenwood we have approached this task in the following manner. Up until about a year ago, we had our patients classified only roughly. We had low and high functional (mental level) patients on the same wards, and likewise we had patients of differing chronological age groups on the same wards. Excepting for the doctors, the available professional people were grouped in one building, and consequently the attendants on the wards had to serve in many capacities and had to care for excessively large numbers of patients.

The institution was recently divided into four team areas, and professional people were assigned in and to each of them. A representative team comprises a doctor (who acts as chairman of the group), a clinical psychologist, a social worker, a nurse or a practical nurse, a habilitation trainer, a recreational technician, a teacher (other than in the Academic School proper), an itinerant chaplain, a secretary and numerous attendants. Their first task was properly to classify the patients of their areas. This involved mass movements from one area to another. Their next task was to set up a 24-hour program for each resident or patient in his or her respective area. Since the approach to the treatment and training of the retardate is a multi-disciplinary one, you can see that no area was neglected. Prior to the setting up of these teams, only the attendants could give parents the information that parents usually wanted concerning their child, and try as they might, they couldn't answer all of the father and mother's questions. Now, a parent gets proper information from a team member.

Our next step was to set up a habilitation ladder theoretically composed of five rungs or groupings. On the first rung are the low functional patients (IQ 0-25). On the second rung are the middle functional patients (IQ 25-50). On the third rung would be the high functional individuals (IQ 50 and above). Occupying the fourth rung are those of the high-functional patients who have progressed to the habilitation wards (one male and one female), and on the fifth rung are those of the high-

Dr. Peffer presented this paper at the Twelfth Annual Meeting of the Iowa Chapter of the American Academy of General Practice, in Des Moines, on September 19, 1960.

1. Administration Building.

2. State School gardens produce fresh vegetables for the dietary in quality and quantity. Patient help makes it necessary to utilize a few mules in an otherwise mechanized department.

3. Juvenile cottage for girls.

4. Harvest scene.

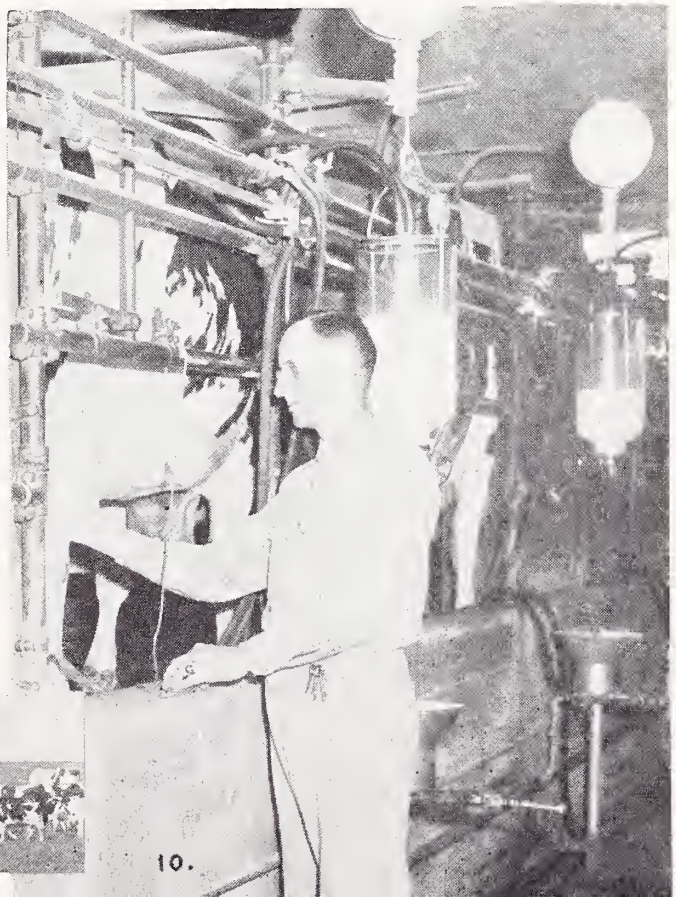
5. Gymnasium.

6. Patients picking strawberries. In the background is part of the orchard which contains approximately 1,500 apple, peach and plum trees.

8. A modern canning plant takes care of garden surpluses. Squashes and pumpkins are large items in the plant's production.

7. Boys' cottage.

10. Sanitary milking parlors have been installed for the dairy.



9. A herd of over 100 dairy cows supplies all of the milk for the School.

functional patients who have been placed in our newly-established trainee-employee program.

Patients on the habilitation wards (about 40 males and 40 females) operate pretty much as a self-governing group. They all have individual job assignments, and they receive small monthly stipends ($2-$5), which they handle as cash. Lower-rung patients use canteen cards. Habilitation ward patients handle their own disciplinary problems, and intramurally they have about 100 special training objectives that they must master before they can become eligible for the trainee-employee program.

The trainee-employee program, the fifth rung of the ladder, makes patients into employees in every sense of the word. Each of them must work at a job eight hours a day and five days a week. He or she lives apart from patients, eats in the employees' dining room, divorces himself from patient activities, and gradually is granted town privileges, first accompanied and later alone. In addition to job-conditioning, each of them must work toward about 100 extramural or outside training objectives. These include mastery of such devices as revolving doors and escalators, and doing such things as ordering a meal and opening a bank account. After they have completed this program, they are ready for placement. We work directly with the Iowa Vocational Rehabilitation Division in job-finding and, in some instances, in providing special job training. We have never had any trouble in making placements. In fact, we have jobs waiting for our trained residents or patients.

THE ACADEMIC AND HEALTH CARE PROGRAMS

I have now given you our program in a certain amount of detail, but I might comment upon some other of our activities such as our Academic School, our health services and our Outpatient Department. About 500 of our children attend the Academic School, and we have classes for preschool youngsters and for those with educational attainments comparable to those of children in the kindergarten and first four grades of ordinary public schools. We have classes for both trainable and educable youngsters, and children complete the levels commensurate with their intellectual abilities. Very few patients are kept in the academic school beyond their eighteenth year (chronological age). Thereafter, they are assigned to the Habilitation Department, where they are given group and individual job assignments commensurate with their potentialities. All patients have rounded programs of recreation, sports and spiritual training.

Since our residents or patients are subject to all of the same illnesses that beset non-retardates, we have two hospital wards for the care of acute cases. All operative and special diagnostic work, however, is done at University Hospitals, Iowa City, and emergency surgery is done at the Mercy and Jennie Edmundson Hospitals, in Council Bluffs. Among the retarded there are a great number who are multi-handicapped, and within the past year we have set up a Physical Therapy Department and have hired two registered physical therapists. Their services are in heavy demand.

In addition to me, the Glenwood School has two psychiatrists each of whom spends a half-day a week at the institution. A goodly number of our patients need psychiatric treatment because of the emotional problems that have resulted, directly or indirectly, from their retardation. We have an electroencephalograph and a certified reader. Our patients receive the services of an optometrist, a speech therapist and a podiatrist when needed. A full-time neurologist recently joined our staff, for we have many children who are multi-handicapped and have neurological disturbances.

During the past year, all of our attendants were required to pass a battery of psychological tests. This procedure, in the main, eliminates the misfits such as homosexuals, sadists and psychopaths who would take advantage of our children.

THE NEW OUTPATIENT SERVICE

We have a budding Outpatient Department, and to staff it we have three social service workers with master's degrees functioning as community consultants. The 51 counties that our institution serves have been divided among them, and their job is to work with the already existing resources in their respective areas. They will work directly with the individuals for whom admission has been requested, and will help to arrange placements of Glenwood patients in county homes, nursing homes and foster homes. It is by this means that we anticipate reducing our census.

As regards applications for admission, the outpatient social worker concerned will cooperate with the community agencies that are interested and will visit the parents and the child. He will make an on-the-spot appraisal of the situation, give advice to the parents (and this may be all that is necessary), and if indicated, will arrange for a pre-admission evaluation at Glenwood (this takes an entire day) for the case being considered. Since it is now our objective to admit only those patients for whom we can perform some service, when the outpatient social worker finds that the prospective patient doesn't satisfy that criterion he will arrange to have the child placed in a nursing home or in a foster home, depending upon the sort of attention which seems to be required. The costs of such care can be paid for by the counties out of their "Institution Fund," and usually the expense is less than it would be if the patient were cared for at Glenwood or Woodward.

THE ADMISSION PROCEDURES

I have thought it advisable to review with you the procedure for admission to Glenwood or Woodward. The parent or guardian of a retarded child may apply for his or her admission by completing

and signing an application form. The form must then be signed by the county attorney and approved by the county board of supervisors. We prefer that applicants seek the help of their county welfare department in completing the application, for the welfare department then sends along a comprehensive social history which helps us in our evaluation. Each application should be accompanied by a photograph of the child for whom admission is requested.

Iowa law requires that an applicant shall have lived for a period of one uninterrupted year in a particular county of this state in order to establish legal residence. If an applicant has no apparent settlement in any county, the officials of the county where he happens to be should forward the application to the State Board of Control, which may classify the patient as a "state case" and send the document to Glenwood or Woodward for further action.

When the application is received by the Glenwood School, a pre-admission evaluation is set up for the parents and the child. This evaluation includes psychological, medical and social work examinations of the child. The purpose of the pre-admission evaluation is to acquaint the parents with Glenwood's program, to determine whether the child needs institutional care, and to determine the appropriate ward placement for him. The pre-admission material is evaluated by an Admissions Committee, which makes the final decision as to whether the child requires institutionalization, and if so, it decides which ward he should be assigned to, and whether there is space for him on that ward. If currently there is no room for him, his application is compared with those of the other applicants for the same space, and priority is given to the child whose situation is most urgent.

Before I close, there is another topic which I would like to discuss—a matter on which each Iowa doctor can help us. Many times we get calls from doctors asking that we take a newborn infant from the hospital where it has just been delivered. There may be an occasional extraordinary case, but generally speaking, a physician does a disservice both to the parents and to the infant by urging this sort of action. The first six years of a child's life can be regarded as the personality-development period, to which the parents make a very important contribution, and this personality development is just as important for the retardate as it is for the normal youngster.

As for the parents of a child who is packed off to Glenwood thus precipitately, they never cease having guilt feelings, for all babies are precious and cute to their parents. So each of you can make a big contribution to the welfare of retarded children by advising the parents to keep the youngsters for five or six years if at all possible. We particularly need your help in this regard.

CONCLUSION

In conclusion, I'd like to say that I think the retarded individual in a great number of instances can be made into an asset rather than a liability. Every individual should have an opportunity to lead a productive life, within the limits of his or her ability, and the retardate must be no exception. In this issue the dignity of man is involved, and if we fail to help the retardate perform to the extent of his abilities, we deny him that dignity!

Coming Meetings

In State

Jan. 10-11 **Obstetrics & Gynecology.** S.U.I. College of Medicine, Iowa City

April 7-8 **Raymond Blank Memorial Hospital Association Pediatric Conference.** Younker Memorial Rehabilitation Center, Iowa Methodist Hospital, Des Moines

Out of State

Jan. 3-7 **Introduction to Electrocardiography for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis

Jan. 7 **Hematology and Cancer Chemotherapy.** Presbyterian Medical Center, San Francisco

Jan. 7 **Northwest Society for Clinical Research.** Hotel Georgia, Vancouver, B. C., Canada

Jan. 8-12 **Seventh Annual General Practice Review.** University of Colorado Medical Center, Denver

Jan. 8-13 **American Academy of Orthopaedic Surgeons.** Hotel Americana, Bal Harbour, Miami Beach, Florida

Jan. 8-14 **Seventh Annual General Practice Review.** University of Colorado Medical Center, Denver

Jan. 9-12 **White House Conference on Aging.** Washington, D. C.

Jan. 9-13 **Recent Advances in Drug Therapy (American College of Physicians).** Health Sciences Auditorium, University of Washington School of Medicine, Seattle

Jan 9-20 **International Clinical Postgraduate Program (University of California Extension).** Mexico City (January 9); Acapulco (January 15); Guadalajara (through January 20). For additional information write University of California Medical Center, Los Angeles 24

Jan. 11 **Los Angeles County Heart Association Mid-Winter Symposium.** Statler Hilton Hotel, Los Angeles

Jan. 12-14 **Ninth Annual Cancer Seminar (Arizona Division, American Cancer Society).** Tidelands Motor Inn, Tucson

Jan 14 **An Evaluation of Librium.** University of California at Los Angeles

Jan. 14	**Symposium on Eye Problems in Children.** Children's Hospital, San Francisco
Jan. 16-18	**Sectional Meeting, American College of Surgeons.** Hotel Dinkler-Tutwiler, Birmingham
Jan. 16-20	**Mechanisms of Disease (American College of Physicians, Columbia University College of Physicians and Surgeons).** Presbyterian Hospital, New York City
Jan. 17	**Technic of Office Psychiatry (Third in the Series "General Medicine and Surgery").** Southeast Kansas Tuberculosis Hospital, Chanute, Kansas
Jan. 17	**Newer Pulmonary Syndromes (Fifth in the Series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri
Jan. 18	**Long Beach Heart, Cancer and TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest.** Long Beach Petroleum Club, Long Beach
Jan. 18-20	**Ninth Postgraduate Course in Diabetes and Basic Metabolic Problems (American Diabetes Association).** School of Medicine, Louisiana State University, New Orleans
Jan. 19	**Neurology (Third in the Series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City
Jan. 19-20	**Obstetrics & Gynecology.** University of Nebraska College of Medicine, Omaha
Jan. 23-25	**Twelfth Annual Postgraduate Course in Medical Technology.** University of Kansas Medical Center, Kansas City
Jan. 23-25	**Twenty-Fifth Annual Session of the International Medical Assembly of Southwest Texas.** Granada Hotel, San Antonio
Jan. 23-26	**Sectional Meeting, American College of Surgeons.** Hotels Del Prado, Reforma, Vista Hermosa, El Presidente, Alffer, Continental Hilton, Mexico City, Mexico
Jan. 23-27	**Below-Knee Prosthetics.** University of California at Los Angeles
Jan. 23-27	**Thirtieth Annual Mid-Winter Convention in Ophthalmology and Otolaryngology.** Statler-Hilton Hotel, Los Angeles
Jan. 26-28	**Annual Cardiovascular Seminar (Northeast Florida Heart Association).** Prudential Auditorium, Jacksonville, Florida
Jan. 26-28	**Otolaryngology for Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
Jan. 26-28	**Rocky Mountain Traumatic Surgical Society.** Aspen, Colorado
Jan. 26-28	**Western Society for Clinical Research.** Carmel-by-the-Sea, California
Jan. 27	**Fresno County Heart Association, Ninth Annual Central California Cardiovascular Symposium.** Fresno Elks Club, Fresno
Jan. 28-30	**Civilization and Man: The Control of the Mind.** University of California at San Francisco
Jan. 29	**Common Problems in Pediatrics.** Presbyterian Medical Center, San Francisco
Jan. 30-Feb. 3	**Clinical Congress of Abdominal Surgeons.** Deauville Hotel, Miami Beach
Jan. 30-Feb. 3	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Jan. 30-Feb. 10	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Feb. 2-3	**California Medical Association Postgraduate Institute.** El Mirador Hotel, Palm Springs
Feb. 6-7	**Electrocardiology, Course 1.** University of Nebraska College of Medicine, Omaha
Feb. 6-8	**Anesthesiology for Specialists.** Center for Continuation Study. University of Minnesota, Minneapolis
Feb. 7-8	**Institute for Metabolic Research.** Highland-Alameda County Hospital, Oakland
Feb. 8-10	**Fifth Illinois Congress of the Illinois Committee on Maternal and Infant Health.** St. Nicholas Hotel, Springfield, Illinois
Feb. 9-11	**Surgery for Surgeons.** Center for Continuation Study, University of Minnesota, Minneapolis
Feb. 11	**Dermatologic Therapy.** Presbyterian Medical Center, San Francisco
Feb. 11-13	**A Course in Pediatrics.** University of California at San Francisco
Feb. 13-14	**Hypertension.** University of Kansas Medical Center, Kansas City
Feb. 13-17	**Obstetrical and Gynecological Assembly of Southern California.** Ambassador Hotel, Los Angeles
Feb. 13-17	**Annual Armed Forces Institute of Pathology Lectures.** Armed Forces Institute of Pathology, Washington, D. C.
Feb. 13-18	**Neurology for General Physicians and Internists.** Center for Continuation Study, University of Minnesota, Minneapolis
Feb. 16	**Mother and Child (Fourth in a series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City
Feb. 17-18	**The Skin: A Law-Medicine Problem (The Law-Medicine Center of Western Reserve University).** Western Reserve University, Cleveland
Feb. 18-19	**Office Surgery.** University of California at Los Angeles
Feb. 19-22	**California Tuberculosis and Health Association and California Trudeau Society Annual Joint Meeting.** Jack Tar Hotel, San Francisco
Feb. 20-22	**Radiology and Radioactive Isotopes.** University of Kansas Medical Center, Kansas City
Feb. 20-24	**Medicine for General Practitioners (University of California at San Francisco).** Mount Zion Hospital, San Francisco
Feb. 20-24	**Selected Topics in Internal Medicine (American College of Physicians).** University of Oklahoma School of Medicine and University Hospitals, Oklahoma City, Oklahoma
Feb. 21	**New Pulmonary Syndromes (Fourth in the series "General Medicine and Surgery").** The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas
Feb. 21	**School Problems of the Adolescent (Sixth in the series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri
Feb. 23-24	**Sioux Valley Medical Association.** Sheraton-Cataract Hotel, Sioux Falls, South Dakota
Feb. 23-25	**Fifteenth Annual Symposium on Fundamental Cancer Research.** M. D. Anderson Hospital Auditorium, Houston, Texas
Feb. 24-26	**Fractures.** University of California at Los Angeles
Feb. 25	**Diabetes and Thyroid Disease.** Presbyterian Medical Center, San Francisco
Feb. 25-26	**Clinical Hematology.** University of Southern California, Los Angeles
Feb. 27-Mar. 1	**Pediatrics for General Physicians and Specialists.** Center for Continuation Study, University of Minnesota

Scientific Articles

Investigating Deaths of Public Concern

RICHARD FORD, M.D.
BOSTON, MASSACHUSETTS

As briefly as I can, I shall do my best to give you an idea of the work I do in the investigation of deaths that may be of public concern. This sort of activity, I am aware, is of special interest to Iowa physicians because of the new law establishing medical examiners. That statute is a step in the right direction, but I am sure it will be found quite promptly that a central laboratory is also needed. In addition, I hope it will be apparent to you that you need competent forensic pathologists—doctors of medicine who are specialists in the interrelationships of disease and injury—and forensic chemists. The police investigator, the forensic pathologist and the forensic chemist comprise a three-legged stool on which the investigation of such deaths rests, and it is an unstable structure if one of those legs is missing or weak.

We think that we have six objectives in our work, which involves 25 per cent of all deaths. Those objectives are (1) the exoneration of the innocent, (2) the recognition of violence and the determination of the kind of violence, (3) the acquiring, interpreting and presenting in court of sound, competent and intelligible medical evidence, (4) the recognition of industrial health and safety hazards, (5) the identifying of public health hazards such as contagions that are correctly diagnosed only at medical examiner's autopsy, and (6) the teaching of medical students, law students, practicing doctors and lawyers, policemen and, of course, lay people.

EVEN EXPERIENCED MEN CAN BE MISLED

Now let me begin by reviewing with you some of the cases that we have been called upon to investigate. The examples that I shall use will point up the mistakes we have made and the disappointments we have occasionally suffered. They will show what lies in store for medical examiners here in Iowa, and will, I trust, forewarn you people to a certain extent at least.

A landlady lay dead in her lodging house. She had had a young woman as a lodger who fell into arrears in her rent payments. She had locked her out and kept her clothes as security for the back rent. Seeking the clothing, the young woman had returned, and while she and the landlady were talking something had happened. The young woman had run to the apartment occupied by a young couple and had cried, "Bring some sugar! The landlady has diabetes and she's had some kind of attack."

The young couple had come running with their sugar—granulated sugar—and they had tried unsuccessfully to force some of it between the landlady's lips, after picking her up and moving her to a couch. Finally, when they were unable to rouse the victim, they called the police.

The police summoned the police surgeon, a physician who answers police calls. He, a man of great experience in sudden and violent deaths, looked at the body and ascertained that the landlady wasn't breathing and had no pulse. He pronounced her dead, and seeing the box of sugar that the roomers had brought and the scattering of sugar grains on the carpet, he made some notes on the pad that he carried in his pocket. He had seen the woman lying on the couch; he had seen the trickle of blood in the corner of her mouth, where she perhaps had bitten her tongue; and he had seen granules of sugar clinging to her lip.

He left a police officer on guard at the scene because the law forbids tampering with the scene of a sudden death until it has been viewed by a medical examiner or at least cleared by him. He left in his car, heading for the police division headquarters to report to the captain, and he was

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Dr. Ford is acting director of the Department of Legal Medicine at Harvard University, and chief medical examiner for the County of Southwick, Massachusetts. He delivered this paper in Des Moines on October 5, 1960, at Mercy Hospital Medical Day.

half-way there when he did a mental double-take. He had missed noting—or, I should have said, missed paying proper attention to—the gunshot wound in the victim's chest, with a large halo of smoke around it. The patch of blood hadn't been at the corner of her mouth. It had been near that chest wound.

Here was an experienced man who had listened to a coherent story that seemed to make sense. He had accepted it, and just hadn't looked for evidence of a violent cause of death, though it was right in front of him! As a matter of fact, there were two gunshot wounds in the body. The second, and actually the fatal bullet, had entered behind the humerus, and had passed across the chest and through the aorta. As a result, the woman exsanguinated rapidly and died.

It might be supposed that the number-one suspect would surely have disappeared by the time the police surgeon came to his senses. It is true that she tried to get away. Out in the hall where she was seated beside a policeman, she reached into her dress, pulled out her .22 revolver and pointed it at him. He grabbed at it, and fortunately it contained nothing more than the casings of the two cartridges already fired. At the station house, she was examined by an old sergeant due to retire and in ill health. He snarled at her and bullied her. She wouldn't open her mouth. He gave up after a half-hour, and a younger man took over. In the meantime, we had done the autopsy and had recovered the bullets. The second officer brought the suspect a cup of coffee and lit a cigarette for her. She told him her story. She had never meant to shoot, she said. She needed those clothes and had brought the gun merely to frighten the landlady.

This case demonstrates several important points. (1) Even an experienced man can be misled by false information. (2) A medical examination can supply evidence on which it can be determined whether or not a suspect is telling the truth. (3) Delicacy in handling a suspect is valuable, especially in dealing with a frightened girl rather than a confirmed criminal.

JURIES CAN REFUSE TO ACCEPT THE FACTS

My next case is that of a man who was rushed to the hospital in a police ambulance. He was unclothed when he arrived. He had a stab wound in his right groin, but it wasn't bleeding when he came in. The wound was explored rather extensively, and the superficial femoral vein was transected and tied off. An incised wound of the superficial femoral artery was repaired, and the patient was put on heparin to prevent thrombosis of the artery. Instead of thrombosing, the leg became pulseless. A sympathectomy was done, high on the right, in the hope that the leg might be saved.

When the man came in, this was the explanation he gave for his wound: "I am a piano tuner by trade, and I was sitting on the edge of my bed at home, trying to dig out the broken stick from one of the wooden hammers that strikes the strings inside a piano. The knife slipped and buried itself in my thigh."

The wound in the upper thigh near the groin was 1½ in. deep, and the knife-tip had stopped against bone. The man's story was superficially plausible, for I have seen death occur in a cabinetmaker who had been using a knife in much the same fashion that this man described.

This patient died two days later. He had suddenly become dyspneic, hypertonic, pale, cold and sweating, and he had a rapid, thready pulse. An EKG had been started, but he had died in the midst of the test. The explanation for the death—medically, at least—was simple. He had had moderately advanced coronary artery disease, and in addition, the hospital staff hadn't realized the amount of blood he had lost before reaching the hospital. He was given just a pint of blood, and that wasn't enough. When his hematocrit reading came back from the laboratory, too late to do any good, it was 25 Gm.

This is a common error in the treatment of incised wounds. If the patient isn't bleeding copiously on his arrival, the staff somehow fails to realize that the reason may be a more or less complete exsanguination.

But now let's get back to the question of how and by whom this man was stabbed. The sergeant went out and talked to the man's wife. After some questioning she began to abandon parts of the story on which she and her husband had originally agreed: "Well, it wasn't a paring knife; it was a 6 in. carving knife." She brought it out. Its tip was bent at a right angle. "Well, I dropped it in the sink. That's why the point is bent." ". . . Well, maybe it was the floor that I dropped it on." "No, I didn't give him the knife when he asked for it. I tossed it to him, and that's how he was injured."

Even with these changes, the story was still plausible. She said she had been angry with him because, the day before, he had blacked her eye. She said she was busy cooking in the kitchen, and didn't want to be interrupted. But the stabbing had occurred at 3:00 a.m., which seemed to us an unlikely time for a woman to be busy cooking, and if the knife-tip had bent against the bone in her husband's leg, as the medical evidence showed to be probable, we felt she must have left her hand on the handle when she tossed the knife to him. The judge was inclined to agree with us, and bound the woman over to the grand jury.

As we were leaving the court, a police officer who had accompanied the ambulance that picked the man up added a further bit of evidence. He said that the victim had been wearing a contraceptive. We checked with the interne at the hospital. He said, "Oh, yes, I remember. I removed it and threw it away. I didn't make any note in the record." This was non-medical information, of course. Well, this man was a piano tuner all right, but his wife had caught him playing a tune on the wrong organ and had stabbed him.

In this instance, I think the grand jury was excessively obtuse. It threw the case out. Here was a homicide, for we knew the facts, but the perpetrator went free. Perhaps the jury felt she had some justification.

MANY ABORTIONISTS USE GREEN SOAP

My next example has to do with the death of a 30-year-old divorcee with four children. She had a boy friend whose occupation was seasonal. He was a bookie. The woman was receiving Aid to Dependent Children, and since there were four youngsters, it was a sizeable sum of money—more, indeed, than the bookie's income. Thus, they couldn't marry. Curious. Social aspect. Anyway, when the woman became pregnant, she and her boy friend decided that she must have an abortion.

As is usual, some helpful moron told the boy friend of someone who could fix the girl up, and the couple went downstate to visit this outrageous center, an ordinary residence where the abortionist lived with her husband and son. She and her aunt from across the street took the pregnant girl into the kitchen to do the job, while the boy friend watched the fights on TV in company with the abortionist's family. After no more than 15 minutes, the two "practitioners" called to them. The girl was lying on the kitchen table and the other two women were chafing her wrists in an effort to revive her.

Well, they went looking for a physician. A surgeon, who they eventually got out of bed, took one look at the girl and pronounced her dead. He then told them to call the medical examiner. In this case the medical examiner was a man who for some reason or other was unwilling to consider the possibility of crime. He listened to the story that he was told—a detailed account of preexisting rheumatic heart disease. This girl, according to the abortionist and her aunt, had had previous attacks of syncope, and this time had had one while visiting them. The medical examiner accepted the account at face value and, on the special blue death certificate reserved for medical examiners, signed the case out as "sudden death due to heart disease," without ever undressing the body. The corpse went to a local undertaker overnight, and the next day a Boston undertaker picked it up and brought it upstate.

We got wind of the case when a drunken woman called the Homicide Division of the Boston Police and reported, "My girl friend went downstate for an abortion, yesterday, and died there last night." On being asked where the body was, she said that it was at such-and-such a funeral home. The police called the undertaker and ordered him to halt his proceedings.

The woman's nude body gave no immediate impression of pregnancy. But when squeezed, her breasts exuded sizeable drops of milk. Now this finding sometimes occurs in non-pregnant women, but in a dead female one must accept it as a possible indication of pregnancy. We examined the perineum but found no blood and no sign of injury. We proceeded to do a careful, routine autopsy, bearing in mind the possibility of pregnancy, as we do with every young woman of childbearing age who dies without a medical history documented by a reputable physician.

This was an especially fragrant autopsy, for throughout the body was a strong odor of some essential oil. We thought at first that it was pine oil, but it turned out to be oil of rosemary. The lungs were heavy and wet. There was no disease anywhere. The heart valves were apparently normal, and the heart was of normal size. The myocardium was completely normal grossly and microscopically. The woman had had no heart disease. She was about three months pregnant, and autopsy revealed hemorrhage in the tissues around the cervix and up into the broad ligaments on both sides. We proceeded carefully in the vagina itself, and found about 3 cc. of a milky substance which we drew up carefully by means of a syringe and needle, and deposited in an aseptic container. There was no blood in the vagina.

We then cut the specimen from side to side, exposing the endocervical canal. Instead of containing the clear mucus of normal pregnancy, it had blood mixed with mucus, but no blood had got down into the vagina. The myometrium on the right side of the specimen was tremendously darkened and gave off an exceptionally strong smell of oil of rosemary. We had already saved 3 cc. of fluid from the vagina. In addition, we saved a chunk of myometrial tissue and some heart's blood, all in separate containers. A forensic chemist would be called upon to present evidence in court, for we knew by that time that a long needle had been passed through the victim's endocervical canal, and instead of going into the amniotic sac, it had deviated into the myometrium, where a substance containing oil of rosemary had been injected.

The substance containing oil of rosemary was tincture of green soap. For some obscure reason, abortionists commonly inject green soap into the uterus. If it is injected into the blood stream, it will cause death in a matter of seconds. When one puts 0.5 cc. of it into the ear of a 12 lb. laboratory rabbit, the animal is dead within 30 seconds. What happens when an ounce or two of it is put into a woman's blood stream? Apparently it acts as a mass enzyme inhibitor. By itself, concentrated oil of rosemary produces some pulmonary hemorrhage in rabbits, but doesn't kill immediately. Apparently it is the plain soap that is lethal.

This woman had died from an attempted abortion, and we could prove it in 16 different ways, but the defense contended that though she might have had an abortion induced somewhere else, she just happened to die at the residence where she was found. Remember that no blood had gone from the cervical canal down into the vagina, and if she had been up and around with injury to the myometrium and with blood in the cervical canal,

one could expect it to be in the vagina. We found that she had massive intravascular hemolysis, but there was no pigment in the kidney, a circumstance suggesting that the thing hadn't gone on long before death. All of these findings, along with our experimental evidence that green soap will kill rabbits, should have convinced anyone that an abortion had been attempted on the premises where this woman was found dead. But I think the point that finally sold the jury was the very practical one that the woman wasn't wearing a sanitary belt or tampon. The members of the jury apparently couldn't imagine that a woman would wander about town expecting to bleed but wearing nothing as a safeguard. The people were found guilty and all went to jail.

We found a pharmacist in the area who admitted that he had long suspected what was going on. Long ago, he said, he had refused to sell the women any more tincture of green soap by the quart.

In Massachusetts we thought we had a community where crime of this sort couldn't get by the screening of a medical examiner, but the gullible individual in this case was a man who had never paid any attention to the meetings we hold three times a year to discuss such possibilities. He had never participated in the group. He had thought he knew it all, but this time he found out that he didn't. As a result, he must have had to spend a couple of weeks hanging around the courthouse waiting for this case to be finally processed. Actually, it had to be tried twice.

This is the sort of thing that can happen even when you think the set-up is right. What happens when there is no screening and when there are no forensic pathologists and forensic chemists?

PEOPLE FUNCTION DESPITE INCREDIBLE LESIONS

The next of the cases that I shall review with you was that of a girl found dead in a third-class hotel room. Early Sunday morning, a man had called the hotel doctor and said, "I can't rouse my wife." When the physician came, he peeked under the covers (for our law forbids tampering with such a scene) and saw a couple of bruises on the woman's shoulder. He put his stethoscope on the woman's chest, underneath the covers, and said, "She's dead." Then he called the medical examiner.

The man, who had shared the dead woman's room, a chief petty officer in the Navy, told police: "Actually I'm not her husband. I'm on an aircraft carrier that pulled into the harbor yesterday. As soon as the ship-to-shore wires were connected, I got a call from this girl. She said, 'I'm registered at the hotel in your name. Come over.' I had met her before. I had to finish my watch. I had to wash up. I had to put on shore-going clothes, and by the time I got here it was pretty late. When she told me she didn't feel well, I just went to bed."

There was no sign of disorder. Even the woman's lipstick wasn't smudged. There was no blood. It looked as if she had gone to sleep and had stayed that way. Her hands were on her chest as if she had just gone to sleep. On the front of her right shoulder was a faint blue bruise. Around on the lateral aspect of her right iliac crest there was a bruise, but it was slightly greenish and couldn't have been the result of a blow as recently as the night before. At her waistline on the left, there was another area of greenish discoloration at least a couple or three days old. And behind her right shoulder we found a broad area of impact and a small abrasion or two.

We proceeded with the routine autopsy, and when we got to the head, we made the usual incision behind one ear, then behind the other, and laid the flaps back. We then discovered an area of contusion that was visible only on the inside of the scalp. Well, that finding is not unique. I have seen a fractured skull in a baldheaded man who had no more than a fringe of hair—a fracture presenting absolutely no sign of abrasion or contusion. It does happen.

We proceeded. On the right side, we discovered a small subdural hematoma, and on the left side we found a massive one which by actual measurement totalled 190 cu. cm. It was the largest one I have ever seen in a normal head. The injury that had produced that hematoma had occurred probably about five days before the woman's death, for the clot was firm and had no liquid component.

If I hadn't processed this case, I never would have believed that a woman with so huge a subdural hematoma could have roamed around town for about five days. She had gone to the hotel. She had checked in. When the bell boy took her bags up, she asked him to get her some aspirin. Then she wrote a note to her father in Texas, saying: "Dear Dad, my hand is shaky. I have no money. Can you send me enough money to come home?"

I have seen people testify in court that an individual with two small hematomas couldn't have been functional. I don't believe it. One can be functional despite the most extraordinary lesions. So this case is an example of the use of medical evidence in exonerating the innocent. The chief petty officer wasn't guilty of that woman's murder, at least.

EXHUMATION AFTER 2½ MONTHS

Now let's turn to a case centering about a Cadillac parked in a lovers' lane far out in the country. The hood was up, and there was no gasoline remaining in the tank. But the attention of the police didn't center upon the car immediately. They were informed that two people were missing from the community. One was a junior executive of a construction company, and the other was a married woman. As a matter of fact, both of them were married, but not to each other. At the end of two days, the man stumbled to a farm house 1½ miles from the car, thoroughly confused. We knew he was confused, for the first thing he asked to do was call his wife. He was in sorry shape. He

was covered with mud, he wore no shirt, for it was in the car, and he was covered with the products of explosive diarrhea.

When the police found the car, the woman was nude, kneeling on the back seat of the car with her face pressed against the back rest, and of course dead.

I read these facts in the newspaper, but I thought I knew what had happened. Do you?

At the hospital where the man was taken, a neurologist went over him and couldn't come up with any specific neurologic loss. It was finally decided that the man certainly had just faked his symptoms, for he must have done something to the woman to cause her death. In the meantime, the woman's body was taken to a pathologist who had never seen the place of death, and no details of the background were given to him. As he examined her, he noticed a slight discoloration of the right upper lip, and he jumped to the conclusion that it represented a blow to her face. On the contrary, in my opinion, it represented no more than pressure of the back rest against her face after death. He opened the head and found free blood on the surface of the brain. From this he concluded that the woman had sustained a subdural hemorrhage. I don't think it represented anything of the sort. Anyhow, he gave it as his opinion that the woman had died as a result of an assault—probably having been hit in the face with a fist, and sustaining a subdural hematoma in that fashion.

The man was indicted for murder and was due to go on trial. At that time, 2½ months after the autopsy and the release of the body for burial, the defense attorney came to me for help, suggesting that the woman probably had died of carbon monoxide poisoning. I heartily agreed with him. These two people had remained in a confined space for two days, and at the end of that time one of them was dead and the other had recovered enough to seek help but was confused and had had explosive diarrhea. To my mind those symptoms indicated carbon monoxide. I've seen the picture again and again.

The lawyer wanted to know what I thought of the chances that we could find evidence of carbon monoxide in the corpse. I said I didn't know, but on a previous occasion I had seen an exhumed body containing portions of tissue that the embalming fluid hadn't reached. The attorney decided to ask the state for an exhumation, and wanted me to help with the subsequent examination. I agreed and we were lucky. Two and a half months after death, after autopsy and after embalming, we found some tissues with red cells in them—ones that hadn't been turned brown by the embalmer's formalin. And we found that they were still 25 per cent saturated with carbon monoxide. This meant that at the time of death this woman must have had a much higher level in her blood. The man was found not guilty of murder, but was subsequently tried and found guilty on a charge of assault and battery. His sentence was for three years, and I think he deserved every minute of it.

WAS OR WASN'T IT SUICIDE?

Here is the final case that I shall review for you. Early one morning, the police got a call from a man who reported that his wife had shot herself. On their arrival, they found the husband very much shaken, but not intoxicated, insofar as they could tell. He and his wife had been estranged, he said, but they had become reconciled and gone to bed together. She had asked him whether he still had his gun, and he had replied that it was in a nearby cabinet. He said she was lying on the side of the bed next the wall, and he was lying on the outside. He reached over to the cabinet to get the gun, he maintained, and had handed it to her. The next thing he knew, there was an explosion. He said he then jumped out of bed, picked up the gun and put it on a chair.

Were we to believe him? The facts were that they had been estranged, and he had pleaded for a reconciliation but she wouldn't hear of it. On the previous day, he had walked in the front door and she had walked out the back. He said that she was lying on the side of the bed next the wall, but when we found her body it was lying diagonally, with the feet on the inside half of the bed and head near the outside. Furthermore, though otherwise naked, she was wearing a sanitary napkin. Had she gone to bed with him willingly, or had he forced her there at gunpoint?

That much of the evidence suggested murder, but several other details suggested suicide. The bullet had entered her right ear, and if she had been on the side of the bed nearer the wall, as her husband told us she was, and if it were he who had done the shooting, he would have had to reach across her body and shoot at himself through her head. The same would have been true if he had shot her while bending over the bed. The blood stains made it virtually certain that her body hadn't been moved since the shooting. It was a contact wound, and there was some smoke residue on the woman's hand. But one can get residue of that sort by warding off a gun as easily as by firing it.

This case hinged on two points that came out later. The girl's mother came for the funeral, and she told me, "That man didn't kill my daughter." She knew her son-in-law and she knew her daughter. Then a statement was obtained from the girl with whom the victim had spent the previous night, after leaving by the back door when the husband came in by the front. "That night in the hotel," she related, "we were on the sixth floor and she had been looking out the window. She turned to me and asked, 'Do you think this is high enough?' I talked her out of it, and I wouldn't think much about it except that two weeks pre-

viously she had said she wished her house were nearer the river so she could drown herself and her two sons."

I think that this woman shot herself. She deliberately got her husband into bed with her. She asked for the gun. She got it into her hand and then raised herself up over him and shot herself. He was so appalled and frightened that he couldn't recollect what happened afterward, except that he got out of bed and put the gun on a chair. Thus, I think, the girl fell where he had lain—or at least that her head and torso fell there.

CONCLUSION

These examples that I have given illustrate how critical some of these investigations are, and they demonstrate the necessity for the medical examiner's keeping an open mind. I wish I could tell you more. There is an infinite variety of these cases, and I have no more than scratched the surface.

Congenital Lesions of the Diaphragm

RALPH A. DORNER, M.D.
DES MOINES

IN THE PREFACE to his book ALL ABOUT MAN, Dr. Joseph Peck says, "It is a known fact that graduates of medical schools are divided into three groups. The top third become professors, the middle group make the best doctors, and the lowest third make the most money."

Some 12 years ago I left the academic ranks. Modesty, if nothing else, keeps me from admitting that I belong to the second group. My late start in practice and a zealous Uncle Sam have kept me from the third group. But Dr. Peck says that he belongs to a fourth group, "the one that has the most fun and satisfaction." I'll readily admit that I feel I belong to that last category. You might say that I am one of Peck's glad boys.

I am going to discuss a group of patients who have helped to make my work full of fun and satisfaction—those with congenital lesions of the diaphragm—and I have chosen certain cases which, from one aspect or another, were unusual or presented some special problems. Some of the cases were quite forthright, but in some the problems were very great. In some, we made errors. If one can share his errors, he may help minimize problems or prevent errors for others.

PRINCIPLES OF THERAPY

There are a few principles of therapy that I should like to mention at the start, and then I'll only allude to them in the rest of my discussion.

1. *The importance of early emergency surgery.* Many of these children have serious respiratory embarrassment due to the decreased functioning pulmonary tissue compressed by the abdominal organs within the thoracic space. Delay in relief of the embarrassment increases the difficulty, for swallowed air distends the stomach and intestinal tract. In some of these cases, compression has been so great that the lungs have been too small to be compatible with life. But the lung, in the borderline case, will grow and function if given a chance by this early emergency surgery. Thus, we do not delay surgery to fit a schedule, to start cut-downs or to carry out other procedures. Only rarely is more than a plane x-ray film necessary as a basis for the diagnosis.

2. *An upper trans-rectus incision is preferred.* If there has been loss of the "right of domain" in the abdominal cavity, the reduced organs can be covered by the skin and subcutaneous fat after one has under-cut these tissues well around to the flanks, if necessary. A secondary repair of the abdominal wall may then be carried out, after adjustment of the organs has taken place.

3. *Use a catheter to inject air into the pleural space to relieve the suction effect prior to reduction of the misplaced viscera.* My old chief, Dr. Frank R. Peterson, taught me this useful maneuver.

4. *Pezzar catheter drainage of the pleural space can be used postoperatively.* This may be put in through an intercostal puncture prior to closure of the diaphragmatic defect. Recently, I have been leaving these tubes open for water seal only 15 minutes out of an hour. In several infants with borderline reserve, I have felt that the continual tidal flow of fluid in the drainage system was actually robbing the child of effective respiratory efforts. No suction is used in this drainage system.

CONGENITAL SHORT ESOPHAGUS

The first case that I shall present was a true congenital short esophagus. A 15-day-old white female was admitted to Blank Memorial Hospital, Des Moines, on October 14, 1954. She had vomited persistently since leaving the hospital following delivery, and it was thought that she probably had vomited while at the maternity hospital. Numerous studies were made by the referring pedia-

Dr. Dorner made this presentation at the twenty-fifth reunion of his graduating class at the S.U.I. College of Medicine, in Iowa City on June 13, 1959.

trician prior to referral to me. A fontanelle puncture to obtain blood yielded diluted blood which seemed to layer in the syringe. It was thought that the specimen might have come from a pocket of subdural blood, but bilateral subdural taps yielded normal fluid. X-rays of the upper gastrointestinal tract revealed a diaphragmatic hernia probably due to a congenitally short esophagus.

On the fourth day of hospitalization, gavage feeding to bypass the hernia proved successful. At about the same time, a pyuria was discovered. There were 75 white blood cells per high-power field, and culture revealed Escherichia coli. On the sixth hospital day, the child was put into a sitting-cradle to hold her constantly upright. She retained her oral feedings and gained weight. I might state parenthetically that since treating this case I have seen a report of a "cure" of a similar patient through the use of such a cradle alone. However, I operated upon this child after the intravenous pyelograms had been found to be negative.

When the child was just a month old, we carried out a transthoracic approach. The pleura was incised from the diaphragm to the aortic arch. The esophagus was freed from its surrounding tissues. With a counter incision through the fibrous portion of the diaphragm, carefully avoiding the phrenic nerve, we were able to reduce the stomach easily. The defect in the diaphragmatic hiatus was closed with several mattress sutures of silk, posteriorly, to approximate the crura.

The infant's postoperative course was uneventful, and follow-up x-rays have shown a normal esophagus and stomach. The late postoperative course has been completely satisfactory, and the child has shown excellent growth.

EVENTRATION OF THE DIAPHRAGM

The next two cases are those of young children with eventration of the diaphragm corrected by surgery. The first patient (D. S.) was treated as an infant in May, 1946, when I was at the State University of Iowa. The details of his record are not available. At that time, a preoperative x-ray showed a density in the lower half of the left chest, and the lesion was at first thought to be an intrathoracic tumor. However, with further studies, we made a diagnosis of eventration of the diaphragm.

At surgery, following a transthoracic approach, a very attentuated diaphragm was found reaching up to the fourth interspace. Correction of the defect was accomplished by drawing upward on the diaphragm and making a large tuck within it. An assistant pushed the stomach downward, and I passed a row of mattress sutures so as to make a line from the front to the back. The resulting flap was then tacked to the lateral attachment of the diaphragm. The first line of sutures was then over-folded laterally and tacked down, so that the diaphragm was quite taut, as in the position of inspiration.

A postoperative film taken nine years later showed that the correction had remained intact.

A four-year-old Mexican girl (C. V.) was underdeveloped, pale and frail. She had been hospitalized repeatedly for bouts of pneumonia and other upper-respiratory-tract infections. Frequent x-rays showed a marked elevation of the right hemidiaphragm and evidence of recurring bronchopneumonia. Bronchograms revealed no evidence of bronchiectasis or atelectasis. There was evidence of loss of lung volume due to the eventration.

Surgery was performed on July 3, 1956, through the right sixth intercostal space. The diaphragm was extremely thin and shiny. It was fibrotic throughout, and no definite muscle fibers were noted, even peripherally. The upper and lower lobes of the right lung were very small, with the major portion made up of a relatively enlarged middle lobe. No atelectasis was found. A two-inch flap was raised, as in the previous case. In this patient, however, the mattress suture line was made to extend from near the pericardial sac laterally to the mid-axillary line. The flap was then tacked down along the anterior attachment of the diaphragm. Some steel sutures were used, and they could be seen on the postoperative films. After this folding, the diaphragm became active and vigorous, and tidaling was noted in the chest tube after closure of the chest cavity. The patient's postoperative course was very smooth. She has had no respiratory ailments since surgery. The x-rays taken on October 4, 1957, fifteen months postoperatively, showed continued satisfactory correction of the eventration.

SOME OTHER DIAPHRAGMATIC HERNIAS

The next patient, a three-month-old girl (P. A.), was admitted because of vomiting for 24 hours—a symptom that suggested intestinal obstruction. The child's medical history revealed that a chest film had been taken of her when she was three weeks old, and that the parents had been given the impression that some cysts were present in the left lung, but that no therapy was indicated. Shortly after the child's admission to Blank Memorial Hospital, a barium enema revealed that the colon extended high into the left chest. This finding established the diagnosis as diaphragmatic hernia, rather than cystic disease of the lung.

At surgery, a left posterolateral defect was noted. The stomach and spleen were in the abdominal cavity. The stomach wall was markedly thickened as a result of prolonged partial obstruction, and greatly dilated although it had been aspirated just prior to surgery. The small bowel, ascending and transverse colon were removed from the thoracic cavity, and the diaphragm was repaired.

The patient's postoperative course was very smooth. Thus, this was a case of congenital

diaphragmatic hernia operated upon at three months of age because of obstruction.

The next patient (R. C. A.) was admitted to Blank Memorial Hospital on June 18, 1954, at one day of age. He had been cyanotic at birth, and had been put into an air lock at his community's hospital. The following morning he was still cyanotic and in respiratory distress. X-rays were then taken, and they showed a diaphragmatic hernia.

Upon admission to Blank, his respirations were markedly labored, and he was very cyanotic. His skin was mottled and cold, and he was almost moribund. He was rushed to surgery, and a defect in the posterior aspect of his left diaphragm was noted. Immediately following reduction of the abdominal contents from the chest cavity, there was a marked improvement in the patient's respirations and color. The dark blood which had been noted in his wound became red as the wound began to ooze.

It was noted that there was only a small nubbin of lung on the left side. Because of the large amount of abdominal contents within the chest cavity and the smallness of the abdominal cavity, it was necessary to undercut the abdominal wall for closure. A Pezzar catheter was placed in the left side.

The postoperative course seemed quite satisfactory during the following day, but then there was evidence of bilateral pneumothorax on one of the early postoperative films. Improvement occurred later, with the pneumothorax on the right side disappearing, but the left lung remaining partially atelectatic. The infant's condition degenerated, and he died rather suddenly about 30 hours postoperatively.

The autopsy revealed massive atelectasis of the left lung, with alveolar and subpleural hemorrhage. The left lung weighed 12 Gm., and the right lung weighed 26 Gm. There was subarachnoid hemorrhage in the cerebellar region, hypoplasia of the left kidney, subepicardial hemorrhages and acute focal tracheitis. There also was passive congestion of the spleen and an acute thymic atrophy.

It was my feeling that had we been able to operate on this child as soon as he was found to be cyanotic, and when an early x-ray had revealed a diaphragmatic hernia, we might have succeeded in saving his life. I felt, too, that the delay in the correction of his difficulty imposed just enough load on his cardiorespiratory system to cause failure.

I want to repeat my plea for immediate surgery when these children are found to be cyanotic and when the x-rays reveal evidence of a diaphragmatic hernia.

The next patient (D. S.) required numerous surgical procedures because of his congenital diaphragmatic hernia. When he was three days old and shortly after the diagnosis had been established, we carried out the reduction and repaired the diaphragm. It was necessary to undercut the skin and subcutaneous fat flaps well back to the flanks in order to cover the reduced abdominal viscera. The secondary repair of the abdominal wall, with reduction of the abdominal hernia, was carried out on about the twelfth postoperative day.

On April 23, 1952, at the age of 2½ years, the patient developed intestinal obstruction, with repeated vomiting. X-rays showed dilated loops of bowel, indicating intestinal obstruction. At surgery, there were adhesions to the spleen, with both small- and large-bowel blockage.

RIGHT DIAPHRAGMATIC HERNIA

Another child (V. L. Z.) was seen at the age of 20 hours, with a history of three episodes of cyanosis since birth. Her color remained good while she was in an oxygen hood. X-rays revealed many loops of bowel in the thorax, many more of them being in the right chest than in the left. The stomach bubble was very large and in the abdominal cavity. Because of these findings, we made a diagnosis of right congenital diaphragmatic hernia.

At operation, through a right trans-rectus incision, a fairly large defect in the posterior aspect of the right hemidiaphragm was found. A dilated stomach, a markedly redundant sigmoid and descending colon, and a small part of the liver were the only organs noted in the abdominal cavity. Despite an injection of air into the chest cavity, reduction of the liver was difficult. It was necessary to cut the round ligament of the liver in order to swing this organ down below the diaphragm. The defect measured 5 cm. in length and 3 cm. in width. The liver had been deeply grooved by the diaphragmatic ring.

Early during the postoperative period, bilateral pneumothorax was demonstrated. This constituted evidence of mediastinal pleural defect in addition to the diaphragmatic hernia. Bilateral Pezzar catheter drains relieved the pneumothorax. From then on, the patient's convalescence was smooth.

MANY OPERATIONS ON ONE INFANT

The last case that I shall present has been the epitome of all our experience in this area of practice. A boy (C. H.), only four hours old, was admitted to Blank Memorial Hospital on August 13, 1957. He had been cyanotic since birth, and was in marked respiratory distress. On examination, he appeared to have grayish rather than bluish discoloration. This grayness was particularly noticeable in the lower extremities. It was difficult to hear any breath sounds posteriorly. Heart tones were poor, but were best heard on the right side. There were no murmurs. The liver was said to be palpable two fingerbreadths below the costal margins. Femoral pulses were palpable. The fluoroscopist reported: "Cardiac pulsation on right

but a solid nonpulsating mass on the left with some movement from above suggesting diaphragmatic activity, and with gas bubbles behind the mass. Impression: Diaphragmatic hernia, congenital, left."

While we were waiting for the anesthesia to be started, the emergency supply of oxygen was depleted and the infant's feet became cyanotic. Then the cyanosis ascended to involve the trunk to the level of the costal margins. Pulsations were again felt in the femoral arteries, and thus, presumably, coarctation of the aorta was ruled out. It was felt that the cyanosis might be due to torsion of the inferior vena cava by the misplaced liver. We therefore proceeded to explore as quickly as possible.

The abdomen was entered through a left transrectus incision. The colon and the small bowel lay within the abdominal cavity, but the liver was found to lie within a hernial sac of an anterior diaphragmatic defect. The liver and the sac extended to the third anterior interspace. The sac was incised to relieve the negative-pressure effect, and the sac was peeled away from its contact with the underdeveloped lung. After the liver had been reduced, part of the sac was trimmed away, but a portion of it was used to reinforce the closure of the diaphragmatic defect. Undercutting of the abdominal skin was necessary so that we could obtain coverage for the liver and the other abdominal structures pushed downward by the liver.

Postoperatively, the patient continued having cyanotic spells, and x-rays revealed a very high-lying stomach. The cyanosis was relieved by cathether decompression of the stomach. It was thought that for some reason our repair had broken down, and I therefore reexplored the patient at one week of age. At this second operation, a posterior defect was found. This had no sac, but contained the stomach. When the stomach had been reduced, I found good muscle adequate to close the posterior defect without too great tension. Thus, the patient had actually had a double defect in his diaphragm—one anteriorly and the other posteriorly, with a bridge of good muscle between.

The infant's respirations and color improved following this second operation, but he began to have bouts of vomiting, and became cyanotic when he attempted to feed. Feeling that we might be dealing with a cardiac lesion, we asked for angiograms on September 15, 1957. The report of the roentgenologist was as follows: "Injection of 7 cm. of 70 per cent Urokon into the inferior vena cava was followed by 12 serial films at ½-second intervals. The medium is seen to enter the right atrium and ventricle, and promptly also the left ventricle. This indicates that there is a septal defect present. There is a large pulmonary artery with adequate circulation to the lungs. The aorta is seen to fill early in the series, and there is a very strong suggestion of a coarctation of the aorta just below the arch. It is also probable that there is a patent ductus distal to the coarctation. The left ventricle appears small, and the left atrium cannot actually be identified. The abdominal aorta is displaced to the right. Summary: Intracardiac shunt due to septal defect. Preductile coarctation."

Following the angiocardiograms, there was a difference of opinion regarding this patient's trouble. One group felt that the cardiac lesion suggested by the angiocardiograms was the cause for his periods of cyanosis. Another group felt that the patient was still having cyanotic spells because of the malposition of the heart and the evidence of the still-remaining high diaphragm in spite of the two operative procedures that had been undertaken for the purpose of correcting the diaphragmatic defects. Further complications arose which kept us from attempting the correction of either of these suspected conditions, since on October 8, 1957, the baby's abdomen was found to be tense and distended, and the record revealed that he had vomited since noon on the preceding day. He likewise had had no bowel movements since the previous day.

A diagnosis of small-bowel obstruction was made, and the patient was explored by one of my colleagues, since I was out of town at the time. A large loop of gangrenous bowel was found. This had been strangulated by an adhesive band, and there had been subsequent torsion. A small-bowel resection, with end-to-end anastomosis, was carried out successfully. The patient survived this surgery, although he had a somewhat rocky postoperative course necessitating gavage feedings to minimize his bouts of cyanosis.

At the time of the abdominal exploration, the resident reported that he had passed his finger up toward the region of the diaphragm and had felt that there was a large defect in the diaphragm at the time of that surgery. On October 31, 1957, because the child still had evidence of a high-lying diaphragm and was still having respiratory distress, I did a trans-thoracic approach and found a marked eventration of the diaphragm, with the diaphragm extending quite high in the chest cavity and markedly thinned-out. The muscle fibers which had been noticed at the previous surgery apparently had atrophied, so that the diaphragm now appeared to be more or less fibrous throughout, similar to the diaphragms that we had encountered in the two previously described cases of eventration.

A radial incision was made from the side and down toward but not reaching the esophageal hiatus. A double row of imbrication was then carried out, similar to the one we had used in the case of C. V. The medial half of the diaphragm was first brought over to the lateral half with interrupted sutures of 00 braided silk. Then this suture line was brought over to the costal margins so as to cause an over-folding and to create tension on the lateral aspect, bringing it to the costal

margin and depressing the diaphragm into an almost exaggerated position of inspiration. The lung was freed of its adhesions and was found to be essentially a trilobar organ with a long, lingular-like tag in the lower lobe. This lower lobe was considerably deformed by the previously surrounding tissues so that it didn't fit the contour of the newly-formed thoracic cavity.

The postoperative course was as follows: The patient improved markedly, he began to gain weight, he had no more cyanotic spells, he acted like a normal child, and he was discharged from the hospital on November 13, 1957. On July 8, 1958, he was returned to the hospital for repair of the abdominal incisional hernia. His course afterward was likewise entirely normal.

The child was in my office on May 22, 1959, and he appeared to be a perfectly normal white male 21 months old. He weighed 25 lbs., and his mother said he had walked alone at the age of 13 months. He had a rather limited vocabulary, but he talked considerably. His mother said that since he was able to communicate rather satisfactorily with his older sister, it wasn't necessary for him to use very many words that adults are capable of understanding.

He is extremely good natured, and appears perfectly well. He has good femoral pulses and he has no cardiac murmur. X-rays show some abnormality of the heart shadow, but otherwise the chest shows the lungs well expanded, with the diaphragm in an essentially normal position. It is our hope that the compression of the lung by the higher-lying diaphragm may have caused the findings noted on the angiocardiogram. At the time of the repair trans-thoracically, no definite evidence of coarctation could be seen. There was slight suggestion of dilatation of the aorta distal to the suspected area of coarctation. Whether this represented a post-stenotic dilatation is questionable. Anyway, we feel that there is no indication for further therapy in this child, unless additional symptoms develop.

SUMMARY

A group of selected cases showing various congenital lesions of the diaphragm have been presented and discussed. An appeal is made for early operative intervention in children found to be cyanotic at birth and in whom there is x-ray evidence to substantiate a diagnosis of diaphragmatic hernia.

Common Misbeliefs in Pediatrics

WALTER M. BLOCK, M.D.
CEDAR RAPIDS

ALTHOUGH I AM AWARE that the material I am about to present is not strictly scientific matter, I have felt for some time that there is an acute need for the medical profession to educate the public with regard to pediatrics, and in particular to dispel some widespread, unfortunate and sometimes perilous misconceptions with regard to children's illnesses.

SOME ARE "PARENTOGENIC"; OTHERS IATROGENIC

Many physicians who care for children have heard mothers say, "My baby has had the measles three times." Since an infection with measles virus confers a prolonged if not a permanent immunity, lasting at least throughout the remainder of childhood, such a statement is based on one of the many misbeliefs which are—if I may coin a phrase—"parentogenic" and, in a manner of speaking, hereditary. I mean that the misconception is passed on from one generation of parents to the next.

Another sort of misbeliefs are iatrogenic, and although they obviously aren't expected to do any harm, they nevertheless are confusing to the public. For example, mothers have assured me that their children hadn't had "real scarlet fever," but had had a lesser ailment or a mild variant called scarlatina. Since scarlet fever is a streptococcal infection beset with all of the potential after-effects of such diseases, it should never be lightly regarded, but should always be treated intensively with penicillin. *Scarlatina* is simply the medical Latin name for scarlet fever, but does not indicate a lesser severity of infection.

Returning to the measles problem, I should like to stress that in cases of rubella as well as of rubeola, the eruption is only a part of the disease. Therefore a rash alone, without any temperature elevation or some clinical symptoms of at least a mild respiratory infection, is never due to measles. It should also be remembered that some of the common viral infections, especially those due to ECHO and APC viruses, can at times produce rashes which are difficult if not impossible to distinguish from the rash seen in rubella.

A few differentiating features are worth recall-

Dr. Block presented this paper at the annual meeting of the Colorado Chapter of the American Academy of General Practice, in Denver, in October, 1959.

ing. The infant who, between 6 and 30 months of age, develops a morbilliform eruption *following* a febrile but otherwise asymptomatic illness of four or five days' duration, almost invariably has roseola (Exanthem subitum). There is no other childhood disease which will produce an eruption *after* the fever has subsided. In contrast, the rash of rubella (the so-called three-day or German measles) appears about 24 hours after the onset of the disease and while the fever is still present. The eruption of rubeola (the so-called ten-day or red measles) doesn't appear until the child has been ill for three to five days with a marked respiratory infection and an increasing cough. On the day of the eruption, the fever generally is high and may easily reach 105°F.

Now, let's turn to chickenpox. Contrary to a commonly-held misbelief, the scabs which form following the vesicular stage are not contagious. Concerning mumps, there is the widely held mistaken belief that if a child has had the disease on only one side, he can get it again on the other side at a later date. Such generally is not the case, since the child infected with mumps virus in all probability develops a permanent immunity.

MISTAKEN NOTIONS ABOUT TEETHING

Now let's take up a subject of quite a different nature. The process of teething is surrounded by a host of mistaken notions. Many parents are convinced that teething can cause fever, and in addition such diverse symptoms as a runny nose, diarrhea, various skin eruptions and even convulsions. Teething is a physiological process, and therefore does not cause any pathologic symptoms. The deciduous teeth which are preformed and present in the newborn infant's jaws couldn't conceivably produce manifestations of illness when they penetrate through a normal gumline. Just as with the older person who has a toothache, the discomfort which infants admittedly may undergo in teething can best be treated with aspirin. Teething lotions are of no value. It is the massage conferred by the mother's finger that produces temporary relief, rather than the material she rubs onto (and probably not into) the gums. The danger in a mother's attributing her child's fever to teething lies in the fact that it causes her to delay in bringing her sick child for diagnosis and treatment.

Probably just as widespread as the misbeliefs about teething are those that surround the annoying but otherwise relatively harmless invasions of the intestinal tract by pinworms. "Rings" under the eyes, picking the nose, grinding the teeth, restlessness at night, nervousness during the day, anemia, fatigue and, again, even convulsions have been blamed on pinworms. Yet none of these symptoms are truly due to these parasites. There is no mechanism imaginable by which pinworms could produce the above-mentioned symptoms. The only conceivable subjective complaint connected with pinworm infestation is itching of the rectum, which frequently occurs at night and is due to the crawling of the worm and the deposition of ova around the rectal opening. If restlessness at night is due to pinworms, the child generally will wake up, rather than merely being restless in sleep, and will scratch the rectal opening or, if a girl, the vaginal area. It is conceded that vague abdominal pain may at times be due to oxyuriasis, but it is not advisable to administer a vermifuge simply because of ill-defined abdominal pain, unless pinworm ova can be demonstrated by the Scotch Tape test.

FACTS AND FALLACIES ABOUT WEIGHT CONTROL

A fallacy of quite a different nature is the commonly-voiced belief that the obese child will "outgrow" his overweight condition. This simply is not so! The process of longitudinal growth does not take place at the expense of body fat. All too often, the unfortunate situation comes to light when the child and his parents have waited in vain for two or three years, and the anticipated miraculous transformation hasn't taken place. The youngster is 13 or 14 years old, has a height of 63 or 64 in., and is found to weigh 140 or even 150 lbs. Often, the child is experiencing serious psychological problems.

It is definitely improper to attempt controlling a child's weight by putting him on a "diet" with an arbitrary time limit attached to it. Generally, children will regain lost weight as soon as they resume their previous faulty eating habits. Rather, it is my considered opinion that the best approach to this difficult problem is first to establish good rapport with the child and to point out to him the disadvantages and possible dangers of obesity; second, to create in him the desire to lose excessive fat; and third, to get him to change his eating habits so that his food consists mainly of skimmed milk, meat, vegetables and fresh fruits—i.e, foods low in carbohydrates and fats, and high in proteins.

While on the subject of foods, I should mention briefly that vitamins, regardless of the number of different ones that are contained in a given preparation, will neither increase a normal child's appetite nor protect him against infections. It is worth stressing, furthermore, that excessive doses of certain vitamins may cause harm. This is particularly true of vitamin A, which if given in large amounts over a prolonged period may produce toxic manifestations (hypervitaminosis A).

MISCELLANEOUS ERRORS

There are a few other items of interest which require only brief mention but which are nonetheless of great practical importance. One of these is the popular misbelief that a newborn infant is in danger of smothering if put to bed face-down.

There is no basis for this notion. Deaths attributed to smothering in bed, if carefully investigated, have almost invariably been traced to some other cause—most commonly interstitial pneumonitis.

One hears it said rather frequently that immunizations shouldn't be given to allergic children. However, with the exception of the eczematous infant who should not be vaccinated against small pox, allergic individuals should be immunized along with everyone else.

The layman will quote any number of reasons why small infants should not be taken outside. To my knowledge, there is nothing harmful in fresh air, regardless of the age of the infant or the temperature of the air. A breeze will not produce "colic," nor will air blowing into the child's ear provoke ear infections. On the other hand, it is of course obvious that infants shouldn't be taken outside in the midst of a rainstorm or when high winds are prevailing.

It should be mentioned that there are no such things as "growing pains." Pain in the legs—often more pronounced at night when the child is resting in bed—is caused by fatigue products in the muscles, and is especially marked after a day of great activity.

A fear frequently voiced by parents originates from the widely-held misbelief that fever may cause damage to the brain. Fever is an essentially useful bodily reaction to infection. The notion that fever can cause brain damage probably can be traced to the individuals' experience, at first or at second hand, with sequela-like mental retardation or behavior disturbance in children who have had a meningitis or encephalitis. Even in cases of these latter sorts, it is the disease of the central nervous system that leads to mental disturbances, rather than the fever that accompanies those diseases, even if it rises to very high temperatures.

A great deal of anxiety is caused by the small infant who passes numerous stools. If the child is in good health and shows no evidence of intestinal disturbance, it is immaterial what the number or appearance of the evacuations may be, provided the stools are of normal consistency. The physician therefore should not let himself be persuaded to treat stools rather than infants.

A fallacy that unfortunately is still found in print is the statement that small infants will sleep 20 hours out of 24—or more. Most normal, healthy babies don't sleep that much.

CONCLUSION

In closing, I want to say that it behooves all of us to take careful mental inventory before we make statements based on time-honored beliefs. Some of these ideas, though they may seem to be "an easy way out," are no more than old wives' tales.

OB. & GYNEC. SHORT COURSE

On January 10 and 11, at the S.U.I. College of Medicine, a postgraduate course will be presented under the joint sponsorship of the Division of Maternal and Child Health of the State Department of Health, the Iowa Obstetrical and Gynecological Society, and the S.U.I. Department of Obstetrics and Gynecology.

The guest lecturers are to be Dr. Paul D. Bruns, of the University of Colorado; Dr. Curtis J. Lund, of the University of Rochester; and Dr. Jack A. Pritchard, of the Southwestern Medical School, University of Texas, Dallas.

The registration fee of $15 entitles a physician to a luncheon ticket, but an additional charge will be made for the dinner. Category I credit will be given by the AAGP to those of its members who attend.

PROGRAM

Tuesday, January 10
Room 331, University Hospitals

4:00 p.m. E. D. Plass Memorial Lecture: "Blood Volume and Anemia in the Mother and Her Baby"—Dr. Lund

Wednesday, January 11
Shambaugh Lecture Room, University Library

8:30 a.m. Registration
9:00 Welcome—Dean Norman B. Nelson
9:10 "Control of Prematurity"—Dr. Bruns
9:50 "Cytological Studies, Biopsy or Conization in the Diagnosis of Cervical Lesions"—Dr. Lund
11:00 "Hypofibrinogenemia in Pregnancy"—Dr. Pritchard
11:45 ROUND TABLE DISCUSSION: The Place of Mid-forceps and Breech Delivery in Present-Day Obstetrics—Visiting Staff
12:30 p.m. LUNCHEON—IOWA MEMORIAL UNION
2:00 "The Diagnostic Problem of Urinary Incontinence"—Dr. Lund
2:40 "Studies on Spontaneous Premature Rupture of the Membranes"—Dr. Bruns
3:35 "Bleeding Problems in the Gynecologic Patient"—Dr. Pritchard
4:15 ROUND TABLE DISCUSSION: Chronic Vaginitis —Visiting Staff
5:00 TOUR OF DEPARTMENT OF OBSTETRICS AND GYNECOLOGY
7:00 SOCIAL HOUR AND DINNER—UNIVERSITY ATHLETIC CLUB

SPECIAL PROGRAM FOR THE WIVES

Morning free

12:45 p.m. Bus at Hotel Jefferson
1:00 LUNCHEON, UNIVERSITY ATHLETIC CLUB—$2.50
2:00 PROGRAM
4:00 Bus to University Hospitals
4:15 OPEN HOUSE, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY
5:00 Bus to Hotel Jefferson
7:00 SOCIAL HOUR AND DINNER—UNIVERSITY ATHLETIC CLUB

Are We Stealing Childhood From Our Children?

PAUL M. KERSTEN, M.D.
FORT DODGE

I SHOULD LIKE TO bring you some of my observations on the way of life of Mr. and Mrs. Citizen in these United States. I ask that you put on my glasses for a few minutes—the glasses of a psychiatrist—and view what is about us.

For years, I have been concerned about all of the forces which lead to a given nation's rise to power and prestige, and more importantly about the factors which lead to the decline of that same culture. From the beginning of history, we have repeatedly seen this rise and fall. The problem is complex and we have no complete answer for it from the combined fields of anthropology, ethnology and sociology, beyond descriptions of the events that have taken place.

We now have an additional tool with which to understand the phenomena—the insights gained from the study of human personality development. It is certain that there is a direct correlation between what we psychiatrists speak of as emotional maturity and the total personality strength of a given individual and it seems reasonable to assume that a parallelism exists between individual strength and the strength of a given culture since a culture is a dynamic composite of individuals.

I can best convey what is meant by emotional maturity by quoting a definition written by Edward A. Strecker, M.D.:

> "Maturity is a quality of personality made up of a number of elements. It is stick-to-itiveness, the ability to stick to a job, to work on it, and to struggle through it until it is finished, or until one has given all one has in the endeavor. It is the quality or capacity of giving more than is asked or required in a given situation. It is this characteristic that enables others to count on one; thus it is reliability. Persistence is an aspect of maturity—persistence to carry out a goal in the face of difficulties. Endurance enters into the concept of maturity—the endurance of difficulties, unpleasantness, discomfort, frustration, hardship. The ability to size things up, make one's own decisions, is a characteristic of maturity. This implies a considerable amount of independence. A mature person is not dependent unless ill. Maturity includes a determination, a will to succeed and achieve, a will to live. Of course, maturity represents the capacity to cooperate, to work with others, to work in an organization and under authority. The mature person is flexible, can defer to time, persons, circumstances. He can show tolerance, he can be patient, and above all, he has the qualities of adaptability and compromise. Basically, maturity represents a wholesale amalgamation of two things: (1) dissatisfaction with the *status quo*, which calls forth aggressive, constructive effort; and (2) social concern and devotion. Emotional maturity is the morale of the individual."

I am concerned about what is happening to our culture as evidenced by the failure of development of emotional maturity in increasingly larger numbers of our citizenry. I am concerned about the trends that are perceptible in the direction of dependency and personality weakness of our future citizens. This is what I see as I peer through my glasses, and it is what I hope you too will see as you look through them with me.

A social problem confronts us—a social problem that is the consequence of some changes that have occurred in our way of life. It is a cultural problem of national scope, rather than one that affects us just here in Iowa. Indirectly, it is a medical problem, and certainly it is a problem with psychiatric implications. I am concerned that we are forcing our children to grow up too quickly, that we are forcing them to adopt superficial adult ways, or a facade of maturity, before they have acquired the wherewithal to back it up—the emotional maturity for a truly adult life.

I believe that my original question, "Are we stealing childhood from our children?" must be answered unequivocally in the affirmative. I believe we American parents *are* robbing our youngsters of their childhood. I believe that we are doing this by default, rather than directly. I believe that the mechanism is a lack of application, or a misapplication, of the parental prerogative. From my own vantage point, the medical, social and psychiatric implications of this mistake are alarming.

IDEALS ARE BEST TAUGHT INDIRECTLY

This social problem of national scope is really the product of changing values and attitudes. Let's spend a few minutes looking at the importance of values and attitudes in the child's growing-up process. The guides which parents give children by instilling in them principles of right and wrong, goodness and badness, integrity, honesty, morality,

ethics, patriotism, love, tenderness, respect and steadfastness are all very important to a happy, satisfying and complete way of life. We know that to inculcate such values in children requires that we begin very early in their lives. I am also sure that you appreciate that most of these values are inculcated less by the direct statements that we make in addressing our children than by the examples which we set for them. In other words, we achieve our objective indirectly rather than directly.

It of course is costly to attempt establishing values in children when problems resulting from their absence are already upon us. One can't do much about preventing illegitimate pregnancy or promiscuity in teenagers or about preventing the unwise use of automobiles when such evils already are established facts. The work of preventing such behavior must start early in the children's lives, and parents must instill the requisite attitudes largely by serving, themselves, as models of proper values, goals and aspirations for their sons and daughters.

It is true that we live in a world of changing values and attitudes. We need, however, to think about where we are going and why. We need to ask ourselves whether we really want to go there. Adaptation is needed, of course, but it is my plea that the adaptation may at all times be socially considerate and acceptable, as well as gratifying and satisfying to the individual concerned. I fear that as a nation we are inclined to drift. I fear that all too often it is easier for us to follow the line of least resistance. I fear also that our living is not enough of a thoughtful process or enough of a reflective process. This is particularly true as regards our children's behavior and activities. All too often it is difficult for parents to assert their prerogatives and require behavior and activities in line with the youngsters' ages and degrees of emotional maturity. Much more thoughtful, mature, adult direction and guidance are needed in the molding process that makes up the development of the child's personality as he progresses toward maturity.

PARENTS SHOULD TAKE A POSITIVE APPROACH

Parents should constantly ask themselves, "Will the proposed activity be helpful to my son or daughter?" rather than "Will it do any harm?" In other words, we should stress the positive in determining what is appropriate for a child. The youngster needs guidance and standards. Witness the behavior codes which are being established in schools these days throughout the country. It is fine that we have these standards, but they are unfortunately an indication of widespread parental default. It is a sad commentary upon our culture that children are having to develop their own sets of standards. It is true that they are doing so under the guidance of school authorities, but the guidance needs to come, basically, from their parents as mothers and fathers and from parents working together. This responsibility cannot be delegated to children or to school officials. To be effective and to promote security, command must be from the top down, and not vice versa.

In all too many instances, children set their own standards of behavior by whim or impulse, and not on the basis of intelligent forethought. By expecting such applications of mature judgment from children, adults default to them. Moreover by doing so, adults put too much pressure upon children and make excessive demands of them, thus causing the youngsters excessive anxiety, nervousness and restlessness, and provoking in many of them a variety of behavior problems. I might comment parenthetically that we have a nation full of restless and anxious children.

It is my thesis that by thus defaulting, we parents generally force our children to lead a synthetic or pseudo-adulthood. We are robbing them of the childhood that is the only true basis for adulthood, and in consequence our citizenry is becoming increasingly immature, impulse-ridden, demanding, and unable adequately to meet the demands of life. We see alarmingly growing numbers of human beings who are adult biologically but are actually only children masquerading as adults. In essence, they are just going through the motions of being adults.

What are some of the activities in which we are negligently permitting our children to engage before they are old enough? We allow boy-girl activities at too early an age. We permit or actually encourage social dancing for children who aren't yet ready for the emotional experience. We permit unsupervised boy-girl activities only a little later, and we countenance chronic "going steady." These are just a few of them. I think that the all-too-prevalent lack of chaperones for early-youth activities also puts excessive pressure on children. I seriously question the appropriateness of providing automobiles to most youths. More about this later.

There is a general lack of supervision of the things children read and the programs they see at the movies and on television. From all sides, children are being bombarded by distortions of the way life really is, and we adults seem to approve this faulty orientation to life when we fail to object. It seems that there is a general lack of concern, among parents, about the type of friends their children choose and about the effect those friends can have on particular children. All of these instances of parental neglect, many of them subtle, thrust the child into excessively stimulating situations before he or she is capable of dealing with them satisfactorily.

WE MISTAKE THE MEANING OF FREEDOM

The reluctance of parents to make decisions for their children comes from a mistaken interpreta-

tion of freedom, as it applies to children. True freedom is the right and the opportunity to do, but it is also—though nowadays this is often forgotten—the right and the opportunity *not* to do, plus at the same time the ability to control one's impulses and the ability to assume responsibility for one's actions. Thus, freedom implies controls —controls which an individual ultimately acquires, but which are the consequence of parentally formulated and imposed ideals and standards. Parents, necessarily, must impose their standards on the children for a rather long period of time. When they shorten that period, they ask too much of their children too early in life, and by default rob them of the most valuable thing that parents have to give.

The role of the parent is not only to take care of the physical needs of the child, but also to make the environment in which he grows of such a nature as to allow emotional development to take place. Just as we cannot make a bean grow by pulling on it, so we cannot force emotional growth in a child. I am afraid that we have long since forgotten that it takes a considerable period—on the average, 21 years—for a child to mature emotionally. Frequently the physical development outdistances the emotional. It is important for parents to provide the proper climate for the development of the inherent attributes in the child, and at the same time make it possible for the child gradually to acquire the internal strengths of an adult. It is important for parents to establish intelligent, reasonable limits for the child while he is in the slow process of developing his own set of controls. Moreover, it is important for parents to help children learn how to channel their aggressive impulses in constructive directions—directions that lead to socially acceptable behavior.

The basic ingredients of children's environment, the home, must be love and acceptance, closeness, tenderness, warmth, understanding, respect and guidance. The prerequisites for these ingredients are structure, limits, authority, direction, and the imposition of values. Parents really need to be disciplinarians in the classic sense. The word *discipline* is a derivative of the word *disciple,* which means teacher.

YOUNGSTERS WANT US SOMETIMES TO SAY "NO"

It has been my observation that in our contemporary culture parents are afraid of their children. Generally speaking, parents have the mistaken idea that to love one's children means to give in to them—acceding to the demands of the individual child, or to group demands and expectations. Often the parent does this even though he realizes that it is unwise. Children perceive this giving-in on the part of parents, and they look upon it as a sign of weakness. Their recognition of parental weakness produces anxiety in the child, a feeling of dis-ease which is often expressed as restlessness, actual physical symptoms or unacceptable behavior.

Oftentimes, to love is to say, "No." Children want this love, this expression of authority, this structure and guidance, and if permission is denied in a setting of closeness and respect, the occasion cannot help being a growth-promoting experience for the child. By fearing the disapproval of children—their own youngsters or the youth of the entire community—parents place themselves in an untenable position. Parents cannot delegate this responsibility, but all too often, I think, they expect the school, the church, the Y, the scouts or the police to do their task for them. Those agencies have their places, but they can't adequately replace parents. At best, they are only part-time parental substitutes. The real values to the child must, of necessity, come from the home.

It is time for us to reappraise our role as parents, to reappraise our rights, our duties, our responsibilities and our prerogatives, ethically, legally and practically. The standard for this evaluation must not be what the individual child or the group of children may want, but instead it must be what, in our mature judgment as parents, seems truly best for the child—what is within the capacity of the child to adjust to, and what is proper for his age. Are ballroom dancing lessons appropriate for a 12- or 13-year-old boy? Is steady dating good for 12-, 13-, 14- or 15-year-olds? When parents don't adequately evaluate these questions and enforce their decisions, their children conclude that their fathers and mothers just don't want to be bothered. That is to say, they interpret their parents' ready acquiescence as evidence of a lack of love for them or as indifference toward their welfare. I am sure that the greatest hostility that one person can show toward another consists of indifference. The youngster's response frequently consists of uncontrolled destructiveness and hostility, lack of responsibility, significant lack of ambition, impulsiveness, promiscuity, illegitimacy, and venereal disease!

RESULTS OF PARENTAL NEGLECT ARE SERIOUS

I have mentioned the problem of venereal disease. There are a million new cases each year in this country, and 50 per cent of these new cases are in members of the 15-19 year age group. Obviously, the problems of promiscuity and illegitimacy are closely associated with that of venereal disease. In 1958, there were 1,200 illegitimate births in the State of Iowa, alone. In 1940 there had been only 650, or only about half as many. In 1957, over the nation as a whole, there were 80,000 illegitimate births to teenagers. These don't include an unknown number of abortions. It is true that children in the adolescent period of life, the most difficult of all the periods, are faced with the problem of controlling and directing their own sexual impulses. It is natural and normal for children to have such sexual impulses. As adults, we need not be afraid of them. But we need to counsel children directly concerning them. Such education in the

home must begin early in life and must continue through the entire maturation process. It is equally important for us to structure children's lives to help strengthen their gradually increasing internal controls over such impulses. We need to direct their energies constructively. We need to supervise longer. We need to keep children out of threatening situations. We need to shield them as best we can from the overwhelming sexual barrage being delivered from all sides to the youth of the nation. We need to educate children properly to the realities of life and love. We need to support them externally until they are truly able to stand on their own feet. We need to remove these parentally determined controls gradually as the maturing child is able to assume control.

I mentioned that we need to help children direct their energies constructively. One of the most significant things that children can do is in the area of work, a most valuable aid in this regard. Unfortunately, we have long since outlawed work for children.

I mentioned the problem of illegitimacy. Usually, illegitimacy is greatest in cultures where marriage is postponed, but in our culture marriage is not postponed. It appears to me that our youth are rushing headlong into marriage. Last year there were 300,000 marriages of persons under 18 years of age. Think of the resulting social problems! Generally speaking, children of today aren't adequately equipped at 18 years of age to handle the responsibilities of marriage. Certainly they are not financially or educationally able to meet the problems that they thus thrust upon themselves. Think of the social problems that follow from the fact that 60 per cent of marriages entered into by persons under 21 years of age end in divorce. Think of the millions and millions of dollars every year that we spend on aid to dependent children, as a result of such early, ill-conceived marriages. Generally speaking, the incidence of divorce over the nation is 25 per cent. This, of course, as well as the other figures that I have given, is an empty number. The statistics don't in any way measure the suffering, deprivation, emptiness and hurts that accrue to the children born to such marriages. But it is apparent, at least, that these statistics are the result of a noticeable decline in values. Marriage seems a less fateful decision than it once did. It is no longer an irrevocable step. It now can be entered into lightly. But it can catapult youngsters into adult life. In it, they are biologic adults, but not emotional adults. They are able to procreate, but they are generally unable adequately to handle the responsibilities that result from such procreation.

It is thus apparent that to a too large extent we are allowing children to set their own standards for behavior and activities. They are incapable, by training, experience, understanding or knowledge, of handling the responsibilities that we thrust upon them. I have given some examples of activities which are inappropriate for the younger teenagers. I have mentioned some of the problems that result from too early mixed parties, lack of chaperones, early dating, parties held away from home, and the permitting of adult modes of dress too early. I have stressed that supervision should be exercised and types of activities should be restricted for a longer period of time. In addition, I question seriously the wisdom of eighth-grade dances. Most children at that stage of development are emotionally unready for such an experience. I also have serious doubts about the validity and wisdom of the junior high school as it is currently structured. I think that children 12 or 13 years of age are too young to be removed from the classic grade school structure.

FREEDOM OF THE PRESS HAS BEEN DISTORTED

I should like to mention two other things. Reflect for a moment on the impact of what children see and read. Reflect for a moment on the misinterpretations of reality with which they are constantly buffeted through the mass communication media. Reflect for a minute on the effect that this barrage has on children's values. A very subtle but nevertheless a real destruction occurs as a result of the distortion of the concept of freedom of the press. Unfortunately, in this day and age, freedom of the press has come to mean licentiousness. I should like to give you one example of what I mean. Not so long ago, I read a newspaper headline which said, "Some Say Hollywood Has Lost Its Glamor. This Is Not True, Witness Eddie and Debbie." This is glamor? Such material can't help effecting a breakdown in the ethical principles of children. It can't help giving them a lopsided picture of love, life and marriage. Unprincipled journalism of this type is a very real social problem. It is really a disease process that is rampant in our culture. I don't hear people talking about this type of disease process, however, though it is certainly as infectious as measles and far more damaging. In fact, it is as damaging to the culture as any cancer.

I made an earlier reference to the role of the automobile. It appears to me that we are turning our eyes from what we know about the effects of automobiles on our youths. We realize that it is increasingly difficult for a high school to get adequate numbers of boys to participate in sports because they are all so busy supporting automobiles. Educators know that the moment a youngster obtains a car, his grades suffer. But nowhere on any side of me do I see people questioning the wisdom of automobiles for children of school age. School officials are powerless. Witness the fact that in my own community, Fort Dodge, the largest parking lot in town is on the east side of the new high school building.

I seriously question whether cars are appropriate for high school students. To be more specific,

I think that automobiles are inconsistent generally with the proper utilization of the school experience. The central theme of the school experience isn't cars, but the acquisition of knowledge and social abilities. I think that automobiles place too great a responsibility on children. Our accident statistics and insurance rates bear this out. They emphasize the fact that, generally speaking, teenagers and high school students are unable to handle the responsibility that the operation of an automobile entails. But nowhere in this day and age do I hear parents talking about exercising proper controls in this regard, and it is the parents who must exercise control. There has been one inconsistency—the fact that some colleges have recognized that automobiles are incompatible with the college experience and have banned them. Yet we think nothing of allowing less mature high school children all over the nation free rein as concerns owning and using cars.

CONCLUSION

In summary, it has been my contention that we are robbing our children of their childhood—that we are doing this indirectly, and often by default. Generally, in our culture, we are failing to exercise the proper parental prerogatives to control and guide our youngsters. Children are all too often setting their own standards of behavior and activity, and by permitting them to do so, we are putting too much pressure upon them. Directly or by default, we are stressing the superficialities rather than the realities of life.

All of this causes our children anxiety, insecurity and a variety of social problems, some of which I have enumerated. By default, we are forcing our children to adopt a facade of maturity too soon. Rather, in a climate of love, affection, understanding and closeness, we need to guide, direct, limit and structure their lives. We need to use our prerogatives as parents to set our children's standards of behavior. We need to stop "running scared." We need to fit activities and standards of behavior more closely to the needs of our children.

Perhaps this seems a long way from my starting point. The increasing emotional immaturity, the emotional dependency of the culture, the types of illness which we see in our penal institutions and hospitals, and more importantly the trends in this direction that we see outside of prison walls, are alarming. By previous standards, we are becoming internally weak!

What can we do about it? Just as the least common denominator of a culture is the individual, so the smallest social unit is the family. All parents should give a great deal of thought to the problem. Individual sets of parents and children must discuss it, and then groups of parents should compare their ideas. It is important for these parents, all working together, to determine what is appropriate for the ages and levels of maturity of their children, and to limit their activities accordingly. In such discussions, parents need to be guided by the positive concept of what is *good* for their children, rather than of what will not be harmful. Through such appraisals within families and among families, and only in this way, can the problem be effectively dealt with.

There is indeed strength in unity. In such an atmosphere of true love, respect and understanding, we can begin to develop a slowing down of our youngsters' too-rapid rush into adulthood. We can allow an emotional maturation which will later on be consistent with a truly adult way of life and its attendant responsibilities.

LATE FIGURES ON VOLUNTARY HEALTH INSURANCE

About two-thirds of the civilian noninstitutional population of the United States had some form of voluntary health insurance during the last half of 1959, according to a new report of the USPHS National Health Survey. The report, based on interviews that took place in 19,000 households containing 62,000 persons, shows that about 67 per cent had some hospital insurance, 62 per cent had surgical insurance and 19 per cent had insurance against the cost of physicians' visits at home or in the doctors' offices. No tabulations were made of the degrees of completeness with which the policies paid those various costs.

Among people under 25 years of age, 66 per cent had hospital insurance, 61 per cent had surgical insurance, and 19 per cent had doctor-visit insurance. In the 25-44 year age group, 74 per cent had hospital coverage, 69 per cent had surgical policies, and 23 per cent had doctor-visit insurance. Among those between 45 and 64 years of age, the proportions were 71 per cent, 65 per cent and 20 per cent, and among persons age 65 and over, they were 46 per cent, 37 per cent and 10 per cent.

In families where the total family income during the previous 12 months was under $2,000, 33 per cent of the people had hospital insurance, 27 per cent had surgical insurance and 9 per cent had insurance for doctor visits outside the hospital. The percentages rose consistently with income, and in the top bracket—families with $7,000 or more per year—the percentages were 84, 80 and 28.

Urban or rural non-farm residents showed higher percentages—about 70 per cent for hospital coverage, as against 45 per cent of farmers and their families; about 65 per cent of surgical insurance, as against 40 per cent; and about 20 per cent for doctor-visit coverage, as against 12 per cent.

The survey did not cover workman's compensation protection, loss-of-income protection, policies paying benefits only in case of accidental injury, Medicare eligibility and eligibility for benefits through the Veterans Administration.

The Evolution of Surgery of the Stapes For Otosclerotic Fixation

B. JAYAPATHY, M.D., and C. M. KOS, M.D.
IOWA CITY

THE SURGICAL ATTACK on the immobile stapes is no recent innovation. Kessel[1] made the first hesitant report in Germany on mobilization of the stapes in 1876. The years between 1890 and 1900 saw the introduction and a highly sophisticated development of surgery of the stapes in this country. Chiefly responsible for these accomplishments were Blake[2] and Jack,[3] of Boston, and Dench,[4] of New York.

However, mobilization of the stapes was abandoned early for the reason that the gain in hearing that resulted from the procedure didn't last very long. Trephining of the stapedial footplate was attempted,[5] but the procedure that eventually found favor was stapedectomy, or the extraction of the stapes. By 1900, it was evident that long-term improvement in hearing occurred in only a very small number of people who had been subjected to these various types of surgery. Stapes surgery was finally abandoned around 1900.

Interest in surgery of the stapes was revived about a half-century later when, in 1953, Rosen[6] rediscovered the operation of stapes mobilization. Since then, the evolution of stapes surgery has followed the same pattern it did between 1890 and 1900, and the recent enthusiasm for various methods of mobilizing the stapes has waned. Trephining of the stapedial footplate has again been done, but hasn't attracted much attention. At the present time, surgery of the stapes nearly always involves extraction of the stapes and some form of prosthetic replacement.

The technics designed to mobilize the stapes may be classified into two groups: (1) the indirect technic, and (2) the direct technic. In the former, advocated by Rosen,[6] Kos,[7] and Goodhill,[8] among others, force, pulsating and steady, was applied in various directions at the neck, capitulum or anterior crus of the stapes to mobilize the ankylosed stapediovestibular joint (Figure 1). Frequent crural fractures, disarticulations of the incudostapedial joint, failure to mobilize the stapes affected by heavy and extensive otosclerotic deposits, and eventual refixation by a continuing

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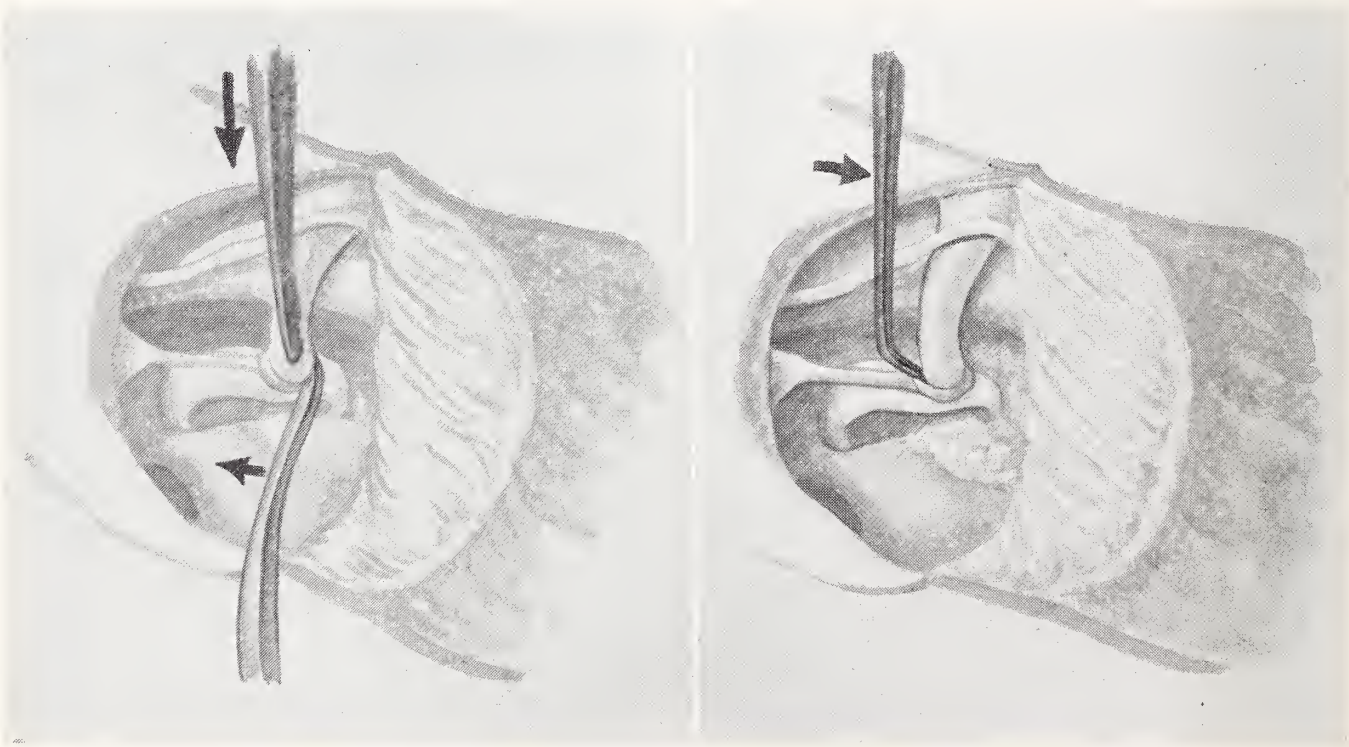

Figure 1. Three of the various technics of indirect mobilization of the stapes.

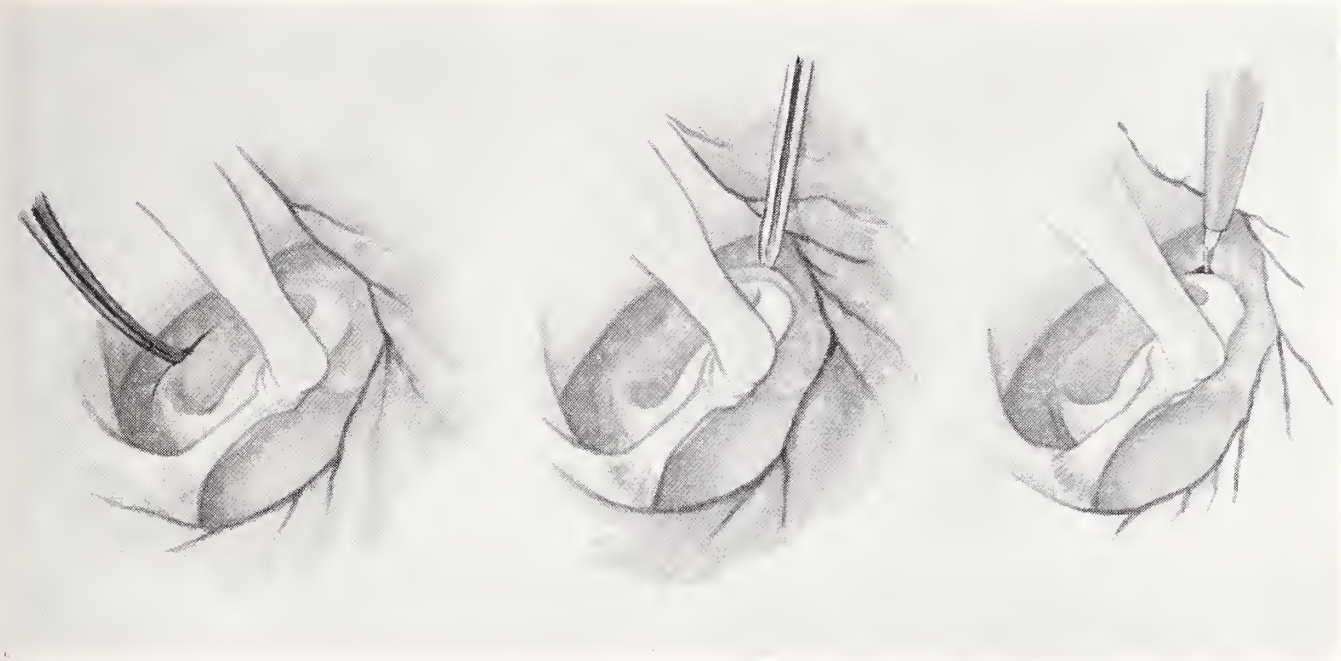

Figure 2. Illustrating the use of the pick, chisel and drill at the footplate in the technics of direct mobilization of the stapes.

otosclerotic process of the stapedial footplate after successful mobilization were the chief reasons for dissatisfaction with the indirect technic.

The direct technics of mobilization involved "cutting, prying, hammering, needling, chiseling and drilling around the margins of the footplate"[9] (Figure 2). With the development of the direct technics, there was an increase in the immediate and late successes. Nonetheless, the surgical failures and the significant incidence of late regressions in hearing stimulated a search for yet other methods.

The stage had then been set for the reintroduction of stapedectomy about 60 years after its first introduction and abandonment. Shea,[10] in 1956, reported a case in which he had extracted the stapes, covered the oval window with a thin, split-thickness skin graft, and then interposed a prosthetic stapes of nylon between the graft and the long process of the incus. In 1958, Shea[11] described a technic of stapedectomy followed by vein grafting over the oval window and interposition of a polyethylene tube strut between the vein graft and the incus (Figure 3).

As a result of Shea's reports, a quiet revolution is occurring in surgery of the fixed stapes. Stapedectomy with some form of prosthetic replacement is becoming the standard procedure for the improvement of hearing in otosclerosis. It can be readily seen that it is only in one essential detail that there has been any progress in stapes surgery since the period 1890-1900. The stapes is now being replaced by a prosthesis.

Figure 3. The Shea vein graft. The oval window after removal of the stapes, and the vein graft and polyethylene tube strut in position.

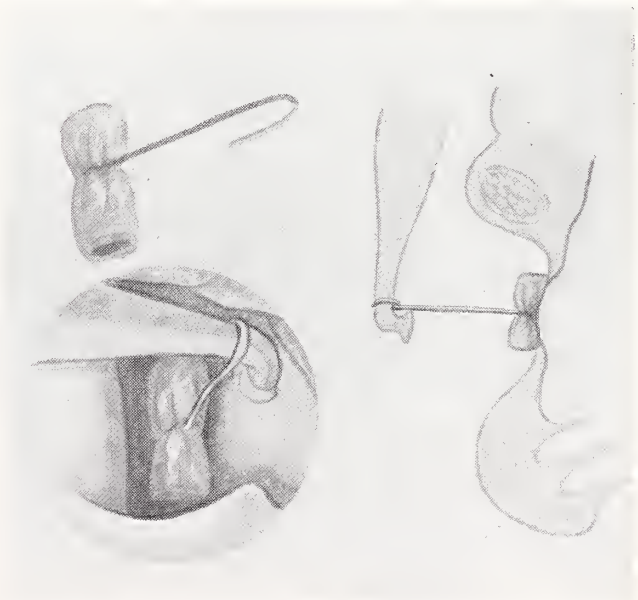

Figure 4. The Kos vein plug, illustrating the vein and steel wire prosthesis, and the manner in which it is positioned to replace the extracted stapes.

TYPES OF PROSTHESES

The prosthesis varies with the otologist. Shea[11] introduced the vein graft and polyethylene tube. House[12] uses gel foam and polyethylene tube; Schuknecht,[13] fat plug and tantalum wire; and Kos,[14] vein plug and steel wire. The results are excellent, regardless of the type of prosthesis.

The idea of the vein-plug stapedioplasty was conceived and developed by Kos.[14] A length of 00000 steel wire is tied with a single knot around the middle of a 3 mm. section of vein obtained from the dorsum of the hand. One end of the wire is cut flush with the knot. About 4 mm. from the knot, the other end of the wire is bent sharply around. The wire is cut 2 or 3 mm. from the bend. This prosthesis consists essentially of a measured length of vein, at the middle of which is tied a hooked steel wire. After stapedectomy, the vein occludes the oval window, and the wire is hooked firmly around the long process of the incus. Thus, it provides for uninterrupted conduction of sound from the drum to the fluids of the labyrinth (Figure 4).

The results obtained by Kos[15] with the various technics are indicated in Figure 5.

The evolution of the technics of stapes surgery will continue despite the good results from the technics of stapedectomy and prosthesis. The search will go on for simpler and more rapid methods, for instruments more completely adapted for microsurgery of the stapes, and perhaps for a preformed prosthesis that will lend itself to mass production.

SUMMARY

As simple mobilization has evolved to prosthetic stapedioplasty, there has been a satisfactory increase in successful results from surgery of the stapes.

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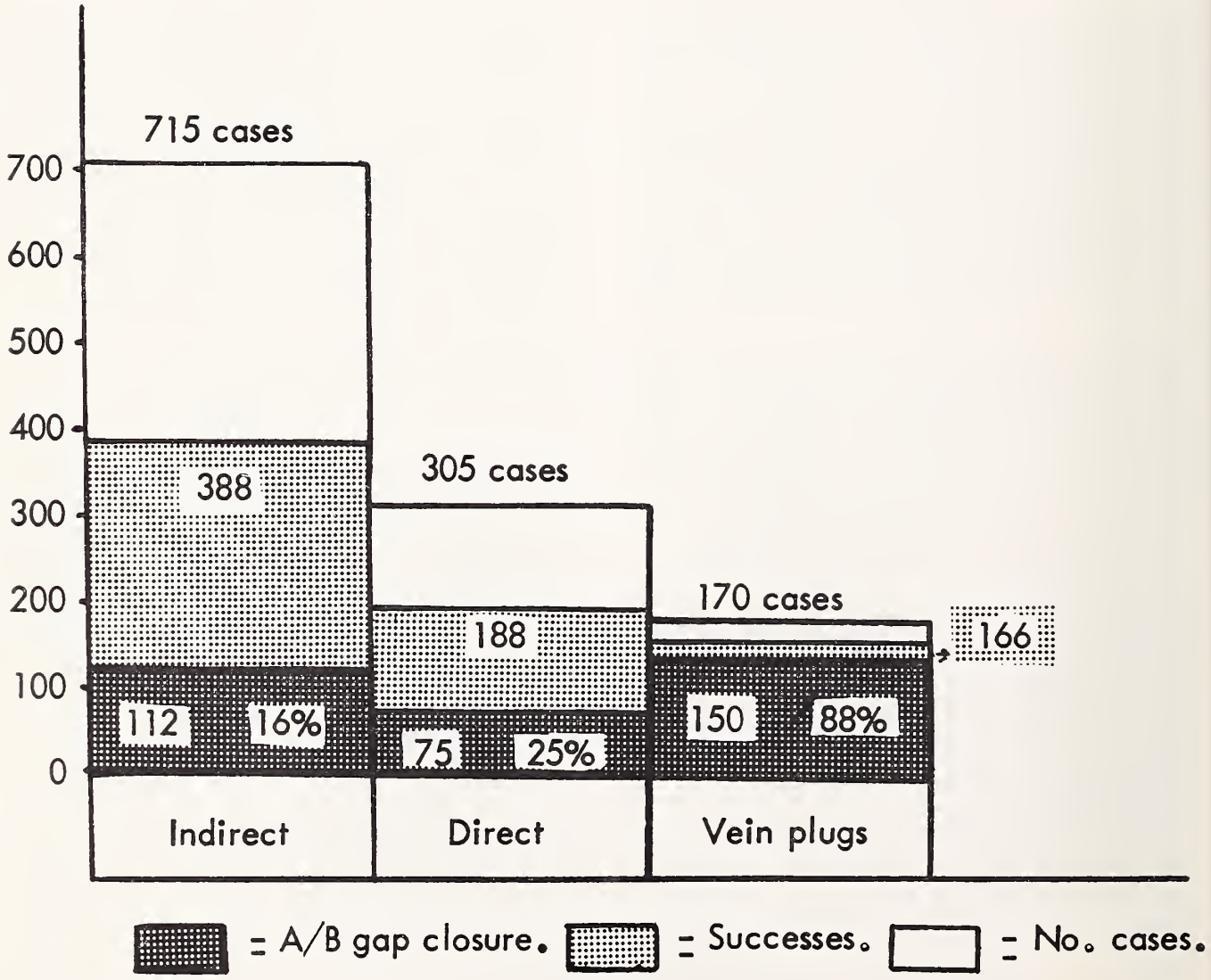

Figure 5. The rates of air-bone gap closure, and the total successes with the indirect and direct technics of stapes mobilization and the vein plug stapedioplasty soon after surgery.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 68-YEAR-OLD retired carpenter was first admitted to University Hospitals four months after the onset of shortness of breath following moderate exertion, mild upper-abdominal pain, tiredness, weight loss and weakness. He had received iron and liver by mouth as treatment for anemia, and had improved both symptomatically and in his hemoglobin. About three weeks before admission, he had begun to have bouts of vomiting at night following his evening meal. From his normal weight of 165 lbs., he had lost 23 lbs.

The patient's medical history included an appendectomy 40 years before admission, and a series of small strokes nine years before admission, which had involved both sides of his face and the right side of his body, and which had required confinement to bed for about three months. His recovery had been gradual but complete over a period of one year. Four years prior to admission he had experienced a fainting spell after a heavy meal, shortness of breath and ankle edema, and had been hospitalized for eight days, during which time he received oxygen.

Examination revealed a very pale, elderly man with some tenderness in the right lower quadrant. There was moderate muscular rigidity of the abdominal wall. No intra-abdominal masses could be felt. No masses were felt either on rectal examination or in the supraclavicular areas. The admission hemoglobin was 5.7 Gm. An x-ray of the stomach revealed a fungating antral carcinoma with almost complete obstruction. Gastric analysis revealed no free acid after histamine. An electrocardiogram showed frequent auricular ectopic beats. After four blood transfusions, the blood pressure was 140/95 mm. Hg. Diagnoses of stomach cancer, old cerebral vascular accident of the left middle cerebral artery, generalized arteriosclerosis with arteriosclerotic heart disease, and mitral insufficiency were made. It was concluded that the patient was a fair-to-poor surgical risk.

At operation, a hard mass in the antrum of the stomach was found, together with similar tissue in several regional lymph nodes. The distal half of the stomach, the spleen and a small portion of adherent pancreas were removed. One of the involved nodes was removed from along the splenic artery. There was no gross involvement of the pancreas or spleen.

The patient had a little pulmonary congestion postoperatively, and the x-rays showed bilateral linear atelectasis and raised a question regarding pulmonary infarction, but otherwise the convalescence was uncomplicated. The patient was discharged, and the follow-up reports revealed that he did well, maintaining his weight between 132 and 148 lbs. He mowed his own lawn, and took care of his garden. He suffered a mild heart attack four years following his operation, but refused to stay in bed.

At 73 years of age, five years and one month following his operation, he was again admitted to University Hospitals with a history of four days of vomiting non-bloody material and persistent mid-abdominal pain. Abdominal distention and shock had been present during the previous 24 hours. He was given intravenous fluid and Wyamine at another hospital, and the last blood pressure recorded for him there was 100 mm. Hg. He was given 75 mg. of Demerol and transferred to University Hospitals.

When he arrived, at 3 p.m., he had neither pulse nor blood pressure. There was an irregularity of heart action. He was breathing deeply, and his lungs were clear. A 5 mg. dose of Neo-Synephrine was given intravenously, and another 5 mg. intramuscularly. The patient was placed in the Trendelenburg position, and his legs were wrapped in elastic bandages. Intravenous saline was started, and blood was drawn for cross-match. The abdomen was distended, and there were no bowel sounds. A Levin tube was passed, and 1,000 cc. of

yellow fluid was obtained from the stomach. Blood was started, but the patient died.

SUMMARY OF CLINICAL DISCUSSION

Mr. Marvin Thompson, junior ward clerk: This patient's difficulty seems to have been an acute abdomen, and we have considered (1) superior mesenteric artery occlusion due to an embolus, thrombus or compression from a tumor; (2) perforation of a viscus accompanied by neoplasia or inflammation, and with resultant peritonitis and ileus; and (3) intestinal obstruction due either to adhesions or recurrent gastric carcinoma. We also considered (4) concomitant myocardial infarction.

It is our impression that this was a case of superior mesenteric artery occlusion due to an embolus. The patient had generalized arteriosclerosis, and had several bouts of occlusion of the coronary and cerebral vessels. He may have had another myocardial infarction a short time prior to his last admission to the hospital. Mural thrombi were undoubtedly present, and the irregular heart rhythm suggests atrial fibrillation, from which an embolus could easily have resulted. Mesenteric occlusion would lead to infarction of the small bowel, with resultant ileus and shock. We felt that the cause of death in this patient was shock.

We were curious about the white blood count, for it is somewhat diagnostic in cases of mesenteric thrombosis. Abdominal roentgenograms are often helpful in such cases, too. We wondered also whether there had been a peritoneal aspiration. Blood aspirated from the peritoneal cavity is very suggestive of mesenteric occlusion.

Dr. Edward E. Mason, Surgery: No x-rays, white blood counts or peritoneal taps were done.

Dr. J. A. Buckwalter, Surgery: A four-month history of vague upper-abdominal pain, weakness, weight loss, easy fatigue, increasing dyspnea, and then the onset of vomiting in the evening after eating constitute the classic symptoms of carcinoma of the stomach. The patient's favorable response to liver and iron therapy is unusual. Not infrequently, these medications are given for anemia before the diagnosis has been established, and usually there are no objective indications of improvement afterward.

It was nine years prior to his first hospital admission that this patient experienced his first indication that all wasn't well with his cardiovascular system. Small strokes and probable cardiac decompensation may have been associated with coronary occlusion four years before admission.

The physical findings were also consistent with a diagnosis of carcinoma of the stomach. Abdominal tenderness and rigidity aren't usually associated with this diagnosis. No abdominal masses or enlarged lymph nodes suggesting extension of the lesion beyond the stomach were noted. The anemia was consistent with an ulcerating carcinoma. X-rays revealed a carcinoma of the stomach, and Dr. Gillies tells me he finds no reason to revise the original opinion.

Dr. Carl L. Gillies, Radiology: That's right, there was a polypoid lesion of the pylorus, with rather pronounced obstruction. A six-hour film showed almost complete retention, consistent with the diagnosis of carcinoma. The colon series was negative. A film of the chest taken postoperatively showed evidence suggesting the presence of a small infarct in the left base.

Dr. Buckwalter: The substantial weight loss in a chronically ill patient suggests a reduced blood volume. Undoubtedly the four units of blood were given preoperatively to correct this deficit. Dr. Mason wasn't guilty of overstatement when he called this man a poor operative risk, but the man survived the operation well and did much better than might have been predicted during the postoperative period. These facts suggest to us that he may not have had carcinoma of the stomach. Further doubt concerning the diagnosis is raised by the limited type of gastric resection which was done. Such a limited operation is usually employed for an obstructing ulcer or for the mere palliation of an advanced carcinoma. Although I am suspicious, for the reasons already mentioned and because the protocol contains no report of histopathologic studies performed on the surgical specimen, I still believe this man had a carcinoma of the stomach. May we have a description of the

Figure 1. Adenocarcinoma of stomach which has penetrated almost to the serosal surface of the gastric wall.

Figure 2. Mucoid differentiation in gastric carcinoma.

gross operative specimen, and see the sections?

Dr. Frederic W. Stamler, Pathology: I don't have any photographs of the gross specimen, but I do have a series of photomicrographs showing that this patient did, indeed, have an adenocarcinoma of the stomach. I chose this first photograph (Figure 1) to show that although it was grossly a polypoid carcinoma, histologically it showed very deep penetration of the gastric wall. This photograph was taken at the outer limits of invasion. Here, one sees remnants of the muscular wall. The serosal surface was just beyond this, and the neoplasm had invaded almost completely through the muscularis of the gastric wall.

In the large polypoid mass, sizable portions of the tumor were mucoid in type, with pools of mucus containing free-floating masses of neoplastic epithelium (Figure 2).

The next photograph shows one of the lymph nodes from along the course of the splenic artery (Figure 3). This rather large node was about three-fourths replaced by glandular carcinoma. I picked this spot to show recognizable features of the lymph node. In many areas, lymphoid tissue had been completely replaced by neoplasm.

The next slide is of another lymph node, one of those removed from the gastric omentum, which also showed very extensive replacement with neoplasm (Figure 4). You will notice that tissue out-

Figure 3. Gastric carcinoma of glandular type in lymph node.

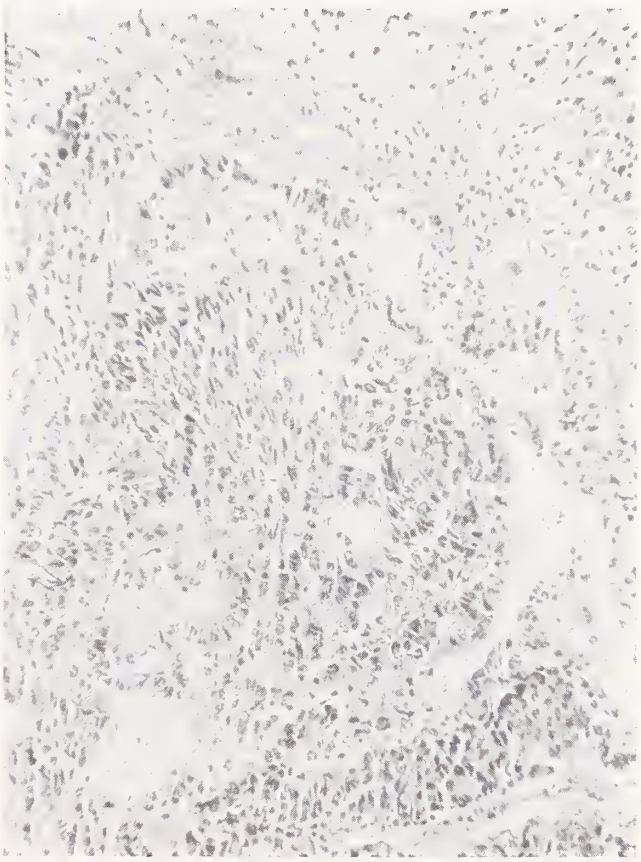

Figure 4. Gastric carcinoma in omental lymph node, with chronic inflammation of adjacent tissues.

side the lymph-node capsule is very heavily infiltrated with lymphocytes and plasma cells. This inflammatory reaction apparently was the basis of the adhesions which were found between the gastric wall and the head of the pancreas at the time of operation. There was rather extensive inflammatory reaction in this tissue, but the carcinomatous involvement stopped at the capsule of the lymph node.

Dr. Buckwalter: The patient's postoperative course was truly remarkable. In spite of node involvement and a limited resection, he remained clinically free of carcinoma five years after the operation. Out of 100 patients admitted to the hospital with cancer of the stomach, only about 10 survive five years, and because of his advanced lesion this patient couldn't have been expected to be in that small number.

During his postoperative course, however, there was again an indication that all was not well with his cardiovascular system. In the immediate postoperative period, there was a possible pulmonary infarct and probable cardiac failure, and another similar episode occurred later. Yet, I don't think these cardiorespiratory difficulties were related to the final episode.

This man, who surprisingly had survived five years following an operation for an advanced carcinoma of the stomach, also survived the serious cardiorespiratory disease, and then rather suddenly began to vomit. There was no blood in the vomitus. It would be helpful to know more about the character of his abdominal pain, about the distention which developed, and about the period of time he spent in the other hospital. I assume that the last of these was no more than a matter of hours. He apparently went into shock and was transferred to University Hospitals. Vasopressors were ineffective. Relative to the cause of his death, it is important that on admission to University Hospitals his chest was clear. There was no evidence of pulmonary edema or congestion. Autotransfusion, like the vasopressors, proved ineffective, and the patient died.

X-ray examinations of the abdomen in the supine and in the upright positions would have been indicated if the patient hadn't been terminal. Four-quadrant peritoneal tap might have established the diagnosis at that time.

Was metastatic carcinoma of the stomach the cause of his death? The history doesn't fit it. There was no suggestion of recurrence. There was no weight loss during the five years prior to his death. Local recurrence at the anastomosis, by interfering with upper-gastrointestinal function, results in cachexia, starvation and death. Peritoneal carcinomatosis occurs in approximately 50 per cent of patients dying with this disorder. Small- and large-bowel obstructions frequently are caused by implants. Less frequently, blood vessels within or outside the gastrointestinal tract are invaded, and death may follow massive hemorrhage. About 35 per cent of the patients who die with cancer of the stomach have metastases to the liver. Twenty-five per cent have metastases to the lung. Lesser percentages of patients have involvements of bone, brain and other viscera. But in this patient there were no signs or symptoms of any of these usual causes of death in patients dying of stomach carcinoma.

The three most common causes of sudden death in a 73-year-old man can be excluded. Although there was a history of probable earlier myocardial disease, this patient's final episode was characterized by the absence of precordial pain and signs of failure, and was not a myocardial infarct. There is nothing to support a diagnosis of massive pulmonary infarction. The latter most often occurs in a chronically-ill, bedridden patient, and is characterized by a sudden, dramatic episode of chest pain, dyspnea, cyanosis and death. In this patient, there was no indication of a focal or generalized neurological disturbance consistent with a cerebral vascular accident.

On first review, this protocol appears to be a classic history of a patient with a leaking or ruptured abdominal aneurysm. The history, physical findings and rapidity of demise are consistent which such a diagnosis. Severe abdominal pain is not always present. However, I believe another type of intra-abdominal catastrophe is more probable because of the absence of positive support for this diagnosis. X-ray findings consistent with aneurysm are absent, and apparently no aneurysm was observed during the surgery that was performed five years earlier, although neither rules it out. If normal femoral pulses are present, this diagnosis is unlikely.

I believe that this man had mesenteric artery occlusion, with strangulation and early gangrene of the small bowel and possibly of the large one. The history of probable earlier myocardial infarction and the final episode provide an almost textbook picture of this disorder. Of the other lesions that could lead to strangulation and gangrene of the bowel, thus causing this man's death, strangulated hernia is the most common. Such a diagnosis seems unlikely, however, in the absence of a hernia mass on physical examination. Volvulus secondary to adhesions seems unlikely because of the five years that elapsed between his surgery and his final illness, and because of the absence of earlier history suggestive of bowel obstruction. Intussusception is another possibility. I favor mesenteric artery occlusion, rather than hernia, volvulus or intussusception, chiefly because of the absence of a history suggestive of intestinal obstruction.

Finally, there is nothing in the protocol that categorically rules out pancreatitis or a perforated viscus secondary to a neoplasm or diverticulitis. About 30 per cent of patients with mesenteric

artery occlusion either vomit blood or have blood in their stools. The absence of these symptoms is the only thing in this man's final illness that is inconsistent with such a diagnosis. The abdominal pain which usually develops during a one- to four-day period is usually more severe than it was in this case. I think that the pathologists will tell us that they found most of this man's bowel infarcted at postmortem. Gangrene had not as yet occurred, but there was peritonitis, with free fluid in the peritoneal cavity. I believe that this man had embolic, arterial rather than venous, mesenteric thrombosis. The latter usually occurs secondary to sepsis, and is frequently less acute in onset.

Dr. Mason: We have very little information about this patient's last admission. I shall read from the admission note: "He did fairly well during the past five years, until four days ago when he began to complain of mid-abdominal pain. He had vomiting of non-bloody material, the pain persisted and finally the vomiting increased and his doctor noted abdominal distention yesterday, and hospitalized the patient. He was treated for shock with IV fluids and Wyamine. The blood pressure was 100."

Demerol (75 mg.) was given, and the patient was transferred to this hospital. On his arrival here, he was in shock. The absence of a white blood cell count on the chart indicates simply that only a brief period intervened between his admission and his death.

Dr. Stamler: At autopsy, it was seen that the abdominal distention had been due to dilated loops of small bowel which filled much of the abdominal cavity. They were described as dark purple or bluish-black in color. There was a small amount of serosanguineous fluid in the peritoneal cavity, but no outright peritonitis, and no massive hemorrhage. This intestinal obstruction 6½ ft. above the ileocecal valve was due to a volvulus. The volvulus was related to an adhesion between the bowel and the operative site in the head of the pancreas. This area of adhesion arose between the gastric wall and the pancreas at the site of the previous operation. Apparently, the adhesions had not caused direct obstruction at that point, but had provided a fulcrum for the small-bowel volvulus.

The scarring in this area was not extensive, and there was no foreign-body granuloma. The small bowel was greatly dilated, and microscopically it showed the changes of very early hemorrhagic infarction, but this had not progressed to the gangrene stage.

A small tumor was found in the liver, but this proved to be a hemangioma. There was no evidence of residual or recurrent gastric carcinoma. There was rather generalized arteriosclerosis and some arteriosclerotic heart disease, with generalized atheromatous change in the coronary vessels and some diffuse myocardial fibrosis, but no evidence of massive, old or recent infarction. There was an old infarct of the cerebellum, with some atrophy of the surrounding cerebellar tissue.

Dr. Robert C. Hickey, Surgery: Was the bone marrow examined, and did it show any evidence of pernicious anemia? I have reference to the initial paragraph in the protocol and to the association between pernicious anemia and carcinoma of the stomach.

Dr. Stamler: The usual sections were taken, and no abnormalities were noted. Although complete blood counts were not obtained on this last admission, I believe that a normal hemoglobin determination was recorded.

Dr. Mason: No free acid after histamine was found prior to the gastric resection. The hemoglobin at that time was only 5 Gm., and the patient had transfusions, with the result that no attempt was made to rule pernicious anemia either in or out. Of course he survived for five years afterward without any special treatment and developed no signs or symptoms of pernicious anemia.

Dr. Stamler, I think it's rumored that carcinoma of the stomach is decreasing in frequency. Do you have any information on that subject?

Dr. Stamler: I have heard that rumor from various sources, and I have read it in a release from the National Cancer Institute published in the May 21, 1960, issue of J.A.M.A.[1] I believe there is some statistical evidence to support it, although the justifications that I've seen have been couched in very general terms. In an informal conversation with persons very much interested in the geographical distributions of diseases, I have been told that the figures being released are on the conservative side, and that the incidence of gastric carcinoma in this country has actually decreased by about 50 per cent.

I should like to show you some of the vital statistics of the United States for recent years (Table 1). These figures, of course, are inaccurate in several respects. First of all, they include all malig-

TABLE I

DEATH RATES PER 100,000 OF TOTAL POPULATION OF THE UNITED STATES DUE TO MALIGNANT NEOPLASMS OF CERTAIN ORGAN SYSTEMS

Organ System	Death Rate During 1950	1953	1957
Esophagus	2.6	2.6	2.7
Stomach	16.1	14.8	12.6
Colon, except rectum	14.7	15.2	15.7
Pulmonary (primary)	7.1	6.7	8.6
Breast	12.6	13.0	13.3
Cervix uteri	5.4	5.5	5.0
Skin, malignant melanoma	0.8	1.0	1.1

nant neoplasms of the organs listed. Yet, carcinoma is by far the predominant neoplasm, and it is the malignancy in a large percentage of the cases involving each of the organs. The greater source of error, of course, is that these figures are based on the diagnoses listed on death certificates. Many such ascriptions are inaccurate, and some of them are completely erroneous. But however that may be, the recorded incidences have stayed remarkably constant. The incidence of malignancy of the esophagus, for instance, remained almost unchanged from 1950 to 1957. Figures for the years since 1957 aren't yet available.

These statistics show that although most neoplasms have been recorded at remarkably constant rates, deaths from gastric carcinoma have shown a sizeable decrease in rate. The decline in death rates from gastric malignancies is even more impressive than is the increase that has occurred in the death rate due to pulmonary malignancies. The death rates from other sorts of neoplasms—despite, in some instances, tremendous campaigns urging early detection and adequate therapy—have changed relatively little. This has been notably true of malignancies of the breast and uterus, as well as of the malignant melanomas.

In almost any textbook of pathology or monograph on gastric carcinoma, the stated incidence of gastric carcinoma is much higher than is indicated in the current statistics. Willis gave rather typical figures in his book published in 1948.[2] His own series of 1,060 autopsies involving malignancies included 21 per cent gastric carcinomas, and from the vital statistics of various countries, he quoted some remarkable figures. In Czechoslovakia, for instance, he said that 66 per cent of deaths from malignancies involved gastric carcinoma. The rates quoted for Scandinavia, Holland and Switzerland were over 50 per cent; for the U. S. approximately 40 per cent; and for Great Britain and Australia approximately 25 per cent. These very astounding figures were quoted for the rather recent past. Yet, in contrast to those very high percentages, the deaths from gastric malignancies in this country in 1957 constituted roughly 8 per cent of the deaths recorded as due to malignant neoplasms. Thus, we have reasons to think that gastric carcinoma is on the wane.

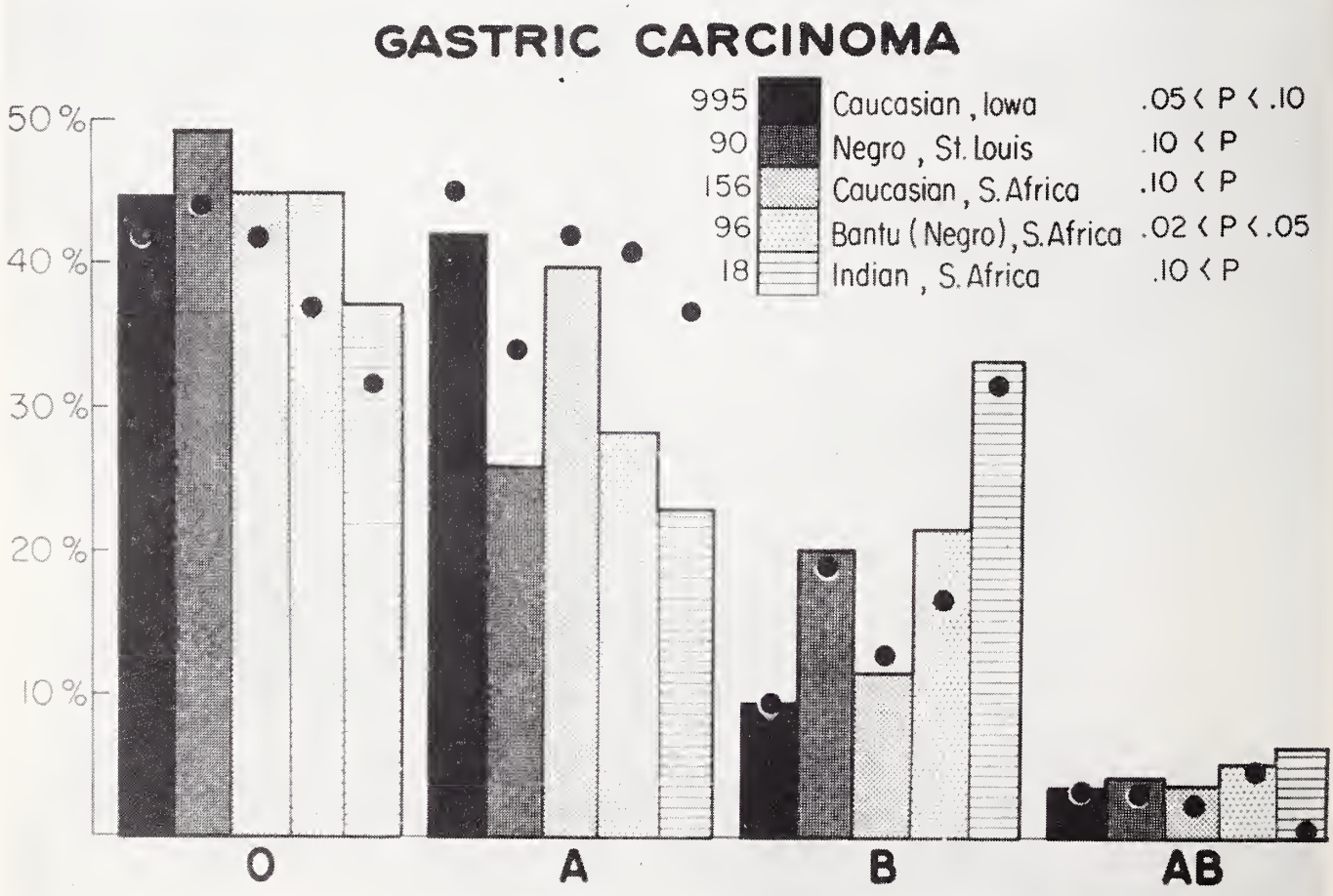

Figure 5. Possible association between O, A, B and AB blood groups and gastric carcinoma in five population groups. The blood type frequencies of patients are indicated by dots superimposed on the vertical columns which represent the control of normal blood type frequency for each of these populations. The evidence of an increased frequency of gastric carcinoma in persons of blood type A is overwhelming.

Dr. Mason: It is disconcerting to see such an improvement in the statistics and not be able to assign credit for it, or even to know how it happened. In Russia at the present time, 30 per cent of malignancies are carcinomas of the stomach.[3] I wonder whether there has been any decrease in the incidence of pernicious anemia.

There is a difference between the incidence of gastric carcinoma in the northern and southern parts of Great Britain. One hypothesis has been that people cook their food in different ways in different parts of Britain. One idea was that using fats over and over again gives rise to carcinogenic substances in the food, and the British mortality figures made this notion seem reasonable.

Dr. Buckwalter spent a year with the surgeon, Ian Aird, in Great Britain, getting acquainted with certain aspects of this problem, and has continued to collect data regarding certain genetic relationships. Dr. Buckwalter, will you say a few words about the etiology and possible genetic relationships as shown in your own investigations?

Dr. Buckwalter: Since Landsteiner first described the ABO blood groups in 1901, serologists and geneticists have suspected and looked for evidence of an association between blood groups and diseases. If such an association could be found, the blood type might well prove to be a valuable tool for human genetic investigations.

The possibility of an association between the ABO blood groups and gastric carcinoma has been investigated in Iowa Caucasian, St. Louis Negro, South African Caucasian, and Bantu and Indian patients (Figure 5).[4] In the graph, the ABO blood type frequencies of patients indicated by the dots are superimposed on the vertical columns which represent the control of normal blood type frequency for each of these populations. Note that an increased "A" frequency was found in the patients in each population group. These findings are consistent with those reported by other investigators. The evidence is overwhelming that gastric carcinoma occurs with increased frequency in persons of blood type A, as compared with those of other blood types.

Dr. Hickey has alluded to the associations between gastric carcinoma and pernicious anemia. The incidence of pernicious anemia has been found to be high in those of blood type A. As yet, no satisfactory explanation has been discovered for these findings.

Dr. Mason: Carcinoma of the stomach was first operated upon successfully in 1881 by Billroth. He removed the distal half of the stomach, and sewed the remainder to the duodenum with interrupted silk sutures. As he described it, the operation sounds very much like the one we do nowadays. It was the first successful gastric resection, but it was also the first failure to cure stomach cancer, for the patient died four months later of carcinomatosis.

One of the first extensive series of cases treated by surgery in this country was due to the activity of the Mayo brothers, and you can see the comparison between the survivorship curves of 1907-1916 and 1940-1949 (Figure 6), plotted on an actuarial basis by the method of Berkson and Gage.[5] This is taken from one of the staff meeting bulletins of the Mayo Clinic,[6] to demonstrate improvement in cure rates. I should like you to notice how far back it was necessary to go in order to show improvement.

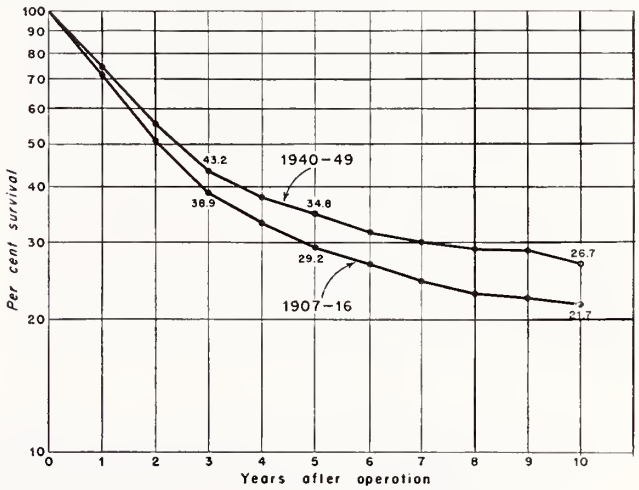

Figure 6. Shows the survivorship curves for patients after gastric resection at the Mayo Clinic in the period between 1907 and 1916 and 1940 to 1949.[6] Comparative curves for the general population of the same age and sex distribution are not shown, but the apparent improvement may well be related to a difference in age or selection of patients, rather than any difference in the surgical procedure used.

There really has been very little, if any, evidence of improvement in the actual surgical extirpation of cancer of the stomach. The results in this disease, provided that the patient has adequate surgery, are dependent upon the biology of the tumor. Let's examine the survivorship curve (Figure 7) a little more closely. These figures are from data I collected at the University of Minnesota,[7] but statistics are similar in hospitals all over the world. They show the survivorship of patients who have had part of the stomach and all gross tumor removed, and who leave the hospital alive. There are actually two curves. The death rate from cancer predominates early, and the death rate from the other causes (paralleling that for a normal population of the same age, sex and geographical characteristics) dominates the later course of the survivorship curve. The method of Berkson and Gage[5] (developed originally by the astronomer Halley in 1693 and used by insurance companies since then) allows one to use all of the data that are available to determine the risk of dying within each of several selected intervals, but after 10 years we have so few patients left that the reliability of the curve naturally is open to question. Nevertheless, the curve suggests that for most of the people who die of cancer of the

stomach, a three-year survival is almost as reliable as a five-year survival in predicting cure. As with any other biological phenomenon, there is a tail to the distribution curve, and occasionally a patient is seen with recurrence as long as seven years postoperatively, but that patient is one in a thousand.

Dr. Buckwalter's surmises that the patient whom we have been discussing probably didn't have carcinoma of the stomach at the time of his death, and that he could be supposed not to have died of cancer because he had lived more than five years after surgery are logical assumptions based on sound statistical evidence. In this case, they proved to be correct.

Improvements in the treatment of carcinoma of the stomach occurred up to about the year 1941, and resulted from attempting to operate upon more patients, resecting more of the patients who were explored, and reducing the operative mortalities (Figure 8). Before 1941, many of these patients died of pneumonitis, peritonitis and abscesses during the postoperative period. Since then, the mortality rate has been quite low. It occasionally increases, for surgeons sometimes have tried to do too much, but the three-year survival and the five-year survival rates have remained about the same.

Table 2 shows the biological behavior of the disease—the median survival times for patients after palliative gastric resection. Some of the patients had partial removal of other organs, and survival was around eight months. In patients with peritoneal implants, the median survival time was only two months. With liver metastases, the median survival time was only four months. Friesen[8] examined the results in six patients who had had all gross tumor removed, but who had tumor microscopically in the line of resection. The duration of freedom from symptoms in these patients was 21 months, but most of them were dead at the end of three years. There was one patient who was reoperated upon after 30 months and then survived five years or more following the second operation.

The sex ratio, for stomach cancer, is about three males to two females. In some 952 cases from the University of Minnesota, the youngest patient was

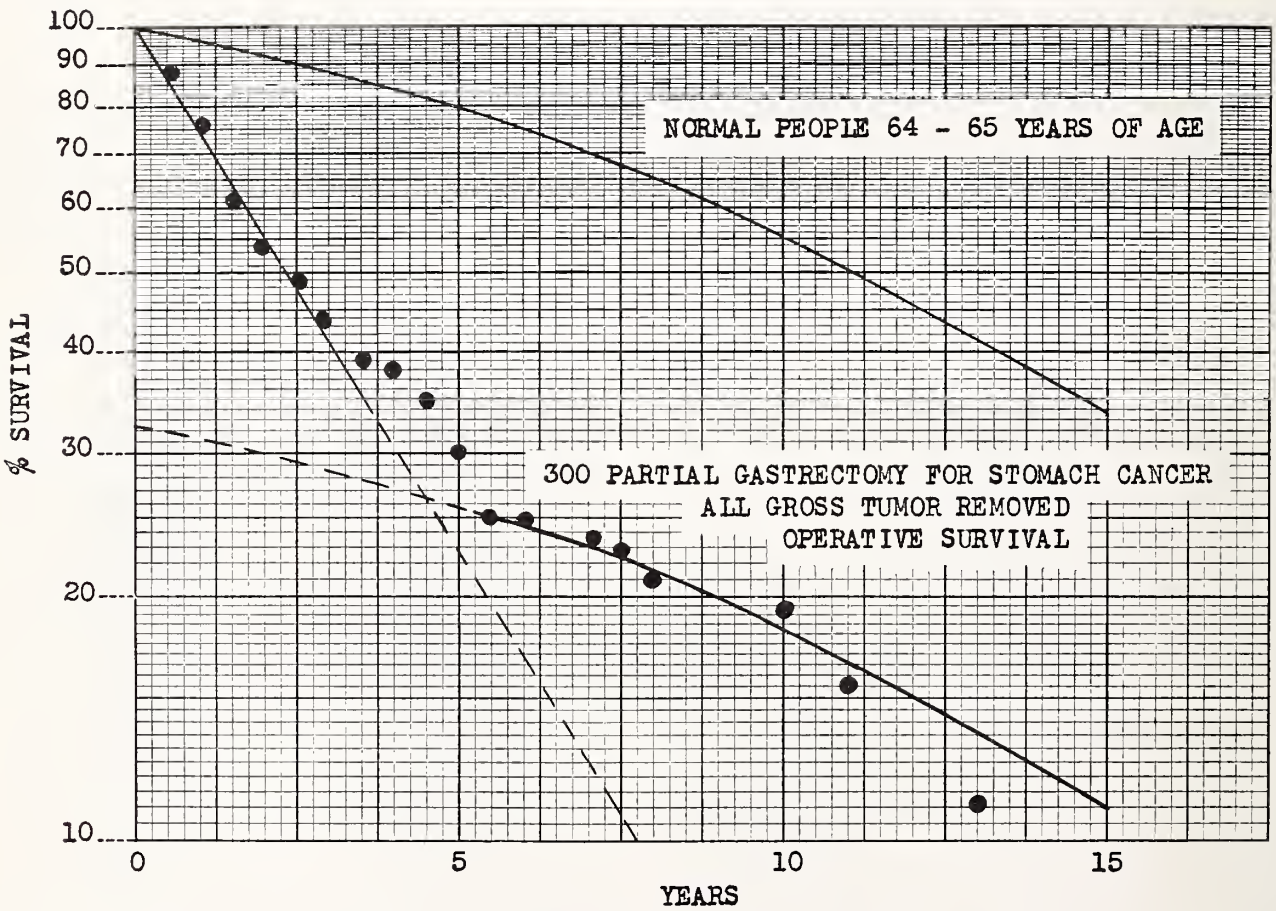

Figure 7. Survivorship curve for 300 patients who had had partial gastrectomy for cure at the University of Minnesota Hospitals between 1936 and 1951. This is a semilogarithmic plot of per cent of patients surviving, on the ordinate, against years following resection, on the abscissa (dots). A line above shows a similar curve for normal people of the same age. Notice that the dots follow two curves. Initially, they follow a curve representing primarily deaths from cancer. Later, survival parallels the death rate for the normal population of the same age. At five years following partial gastrectomy, 70 per cent had died, but 20 per cent could have died from causes other than carcinoma. Thirty per cent remained, and most of those patients had been cured.

TABLE 2

SURVIVAL TIMES OF INCURABLE GASTRIC CANCER PATIENTS

	Number of Cases	Median Survival (Months)
No surgery	177	1
Exploration only	177	2
All palliative procedures other than gastric resection	89	2
Palliative partial gastrectomy	127	7
Partial gastrectomy and partial colectomy	12	8
Partial gastrectomy and partial pancreatectomy	47	8
Partial gastrectomy with rectal shelf	11	2
Partial gastrectomy with liver metastases	44	4
Liver metastases and gastrostomy, gastroenterostomy and enterostomy	40	2
Liver metastases and exploration only	30	2

28 years of age, and the median age for the group was 63 years. The results at the Mayo Clinic during the same period were somewhat better, but the median age of the patients was six years lower. The results in terms of five-year survivals for all patients with stomach cancer may actually be a little poorer now, because the median age of patients is increasing. Attempts at early diagnosis require that we pay attention to the symptoms that might be present in carcinoma of the stomach, and they are not diagnostic. These are mild pain, fullness, vomiting, belching, hematemesis and weakness. Occult blood has been found in the stool in about 83 per cent of cases. Achlorhydria was present in 71 per cent. Only 12 per cent of patients with stomach cancer had more than 30° free acid.

At present, there is little prospect for improving the surgical removal of stomach cancer, but continued efforts must be made to recognize the early symptoms and to establish the diagnosis during an early stage of the disease. The current decrease

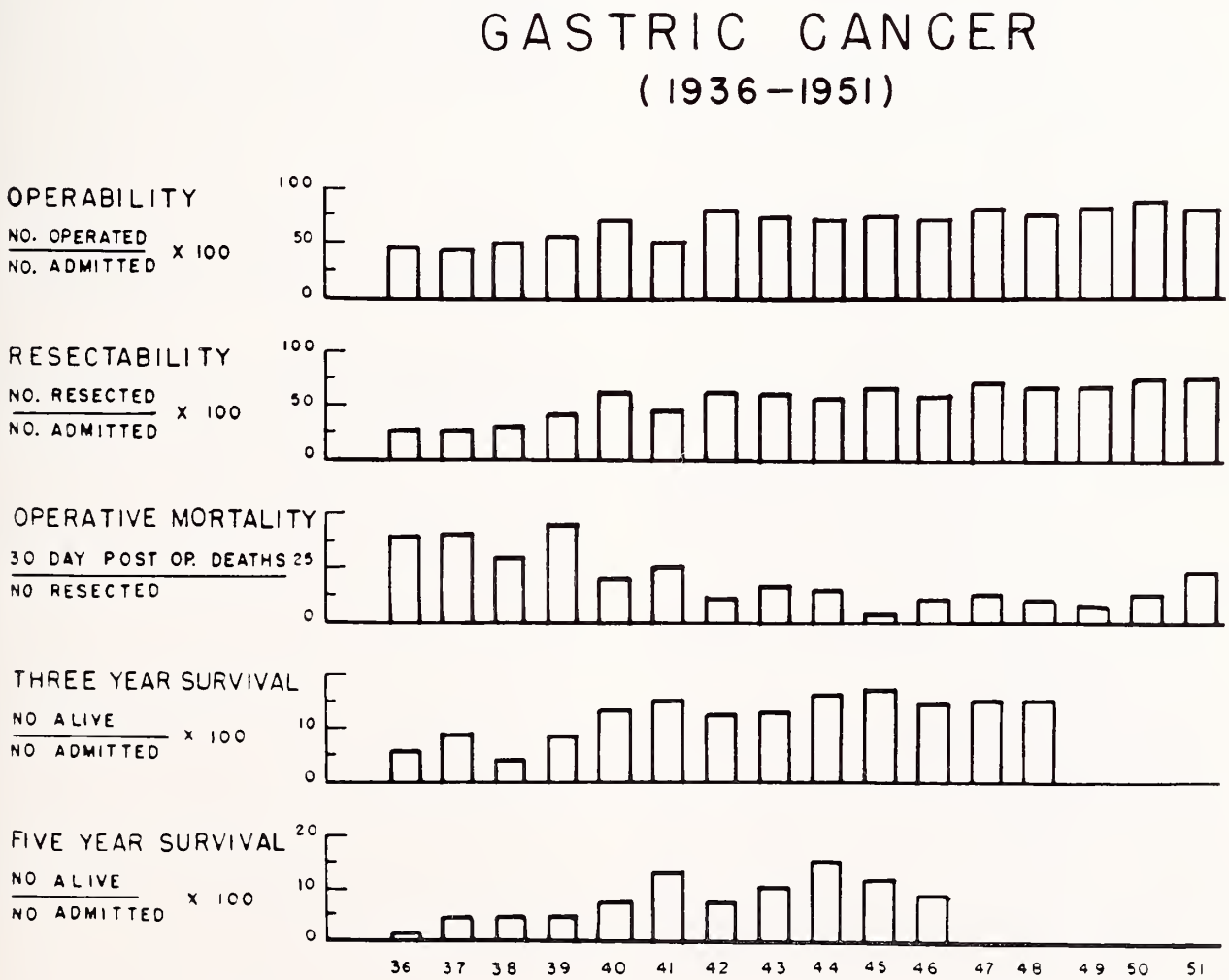

Figure 8. This graph shows the early improvement in operability and resectability that was accompanied by an increase in the survival rate. Around 1940, operative mortality decreased, and a further improvement in survival rates occurred. Data for this graph came from a study by Mason, Kelley and Barclay.

in incidence, if true, is encouraging but as yet unexplained.

SUMMARY OF NECROPSY FINDINGS

The distended abdomen was found to contain dilated, darkly discolored loops of small bowel which included those portions of intestine proximal to an area of volvulus, with obstruction of the ileum 6½ ft. from the ileocecal valve. Volvulus was probably due to ileal adhesions present at the site of the previous subtotal gastrectomy. The involved small intestine showed changes indicative of early hemorrhagic infarction, but without perforation or gangrene.

Other findings of interest included moderately advanced, generalized arteriosclerosis, with arteriosclerotic heart disease, old cerebellar infarction and nephrosclerosis. A small, cavernous hemangioma of the liver was an incidental finding.

The cause of death was shock, assumed to have been due to the effects of intestinal obstruction.

There was no evidence of residual or recurrent gastric carcinoma.

ANATOMICAL DIAGNOSES

Volvulus, small bowel, with obstruction and early hemorrhagic infarction, secondary to adhesions, postoperative

Subtotal gastrectomy, remote, for adenocarcinoma of stomach; no residual neoplasm

Arteriosclerosis, generalized, moderately advanced

Nephrosclerosis, moderate

Hemangioma, cavernous type, liver

Hyperplasia of the prostate.

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—*Sound legislation* to provide funds for hospital and medical school construction, improved pure food and drug laws, regulations for the control of hazardous substances, civil defense and medical stockpiling.

—Adapted from the PR section of MINNESOTA MEDICINE, 48:729, (Oct.) 1960.

Editorials

COUNTY TETANUS-IMMUNIZATION CAMPAIGNS

The medical profession throughout America has become increasingly concerned, in recent years, over the possibility of tetanus as a sequel to accidental injuries of all sorts, for the administration of tetanus antitoxin following vehicular, occupational and domestic mishaps has grown progressively less satisfactory. In some instances the antitoxin is ineffective, and in others it produces severe allergic reactions. Moreover, tetanus can follow a scratch or a minor cut—an injury too slight to bring an individual to see a doctor.

It is perhaps best to follow the policies of the Armed Forces by administering original tetanus immunizations, with tetanus toxoid (precipitated or adsorbed) if the subject hasn't received it for several years, and then giving booster shots no less frequently than every four or five years thereafter.

In order to bring older children and adults to get this type of protection, the Plymouth County Medical Society has started an educational program in cooperation with the Plymouth County Farm Bureau. Other county medical societies might well follow its example.

On October 10, a member of the Plymouth County Medical Society addressed a group of Farm Bureau township committee women on the subject of tetanus, and gave them copies of a leaflet containing information to take to their neighbors. The Plymouth County Farm Bureau is helping with the campaign by publishing appeals in its weekly news bulletin, and has asked the Iowa Farm Bureau Federation to recommend the project to its organizations in all of the other counties in the state.

Information for doctors on tetanus immunization can be found in two recent issues of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, February 1960, pp. 77-86, and September 1960, p. 593. Copies of the Plymouth County Medical Society's leaflet for laymen can be obtained from Dr. R. J. Fisch, of LeMars.

BIO-MEDICAL ASPECTS OF NUCLEAR-POWERED AIRCRAFT

Nuclear power for aircraft undoubtedly will become a reality in the very near future. Its endurance will be its major advantage over the conventional systems of propulsion. Large quantities of fuel will not be required, low-altitude flying will become practical, and the range of aircraft will be limited, essentially, only by the endurance of the crew members.

The biological effects of radiation on the air crews and the hazards which would follow crashes of nuclear aircraft have been discussed by Lt. Col. Charles M. Barnes, USAF, in the October, 1960, issue of MILITARY MEDICINE. In the design of nuclear-powered aircraft, he says, there must be a compromise between the objectives of obtaining maximum performance from the aircraft and providing maximum protection for the crew. If such a plane were to crash, there would be a loss of cooling for the reactor power plant, and as a result the fuel elements would melt, releasing a portion of the accumulated radioactive fission products to the atmosphere. Nuclear heat, accompanied by any fire that might develop, would disperse radioactive particulates and aerosols to be lofted and carried downwind throughout a pencil-shaped area. The region within a few hundred yards of the crashed airplane could be considered extremely dangerous. Yet crew rescue, fire-fighting and cleanup procedures could be accomplished through the use of remotely controlled or shielded vehicles.

Here are some of the sorts of research that Lt. Col. Barnes says are in progress:

(a) Studies of the effects of exposure to radiation in doses equivalent to those which will be received by the air crew. These studies are performed on animals with long life spans and with bodies approximating the size of man's.

(b) Search for a compound which will alleviate radiation damage when administered as a pill, either before or after irradiation.

(c) Psychological studies of stress and fatigue on crewmen when they are confined in compartments for periods of time equivalent to a nuclear-aircraft mission profile.

(d) Experiments with fission products released from a simulated aircraft crash. These studies include (1) the kind and quantity of fission products released, (2) their probable deposition in accordance with varying meteorological conditions, (3) the effects of these fission products when inhaled by experimental animals simulating man, and (4) countermeasures which may be initiated to limit the untoward consequences of the release of such products.

The general public can rest assured that when nuclear-powered aircraft begin flying, every detail of safety will have been thoroughly studied, and it will be certain that the Air Force can operate such systems effectively and without undue hazard.

EOSINOPHILIC GRANULOMA OF THE LUNG

'Twas a day in December
In old New Orleans
A chest ray was taken
With nothing foreseen.*

No symptoms were present
Nor complaint had been heard;
The matter routine
For employment assured.

But lo, at the viewing
Of the roentgenogram
Disease was detected
Over each diaphragm—

A symmetrical mottle
Diffusely throughout
The unhappy lungs
Of this innocent lout.

What followed, believe me,
Was not fantasy.
It was science unfettered—
A caducean spree!

A white count, a red count,
Hematocrit too,
A sed rate, a urine,
Differential so true.

The sputum was smeared
And cultured to boot;
The stomach was flushed
Any germs to uproot.

The skin was injected
With antigens three—
Tuberculin, histo
And Joaquin debris.

The blood and the liver
Were spied on profuse
'Til danger there was
Of cooking his goose.

Turbidity zinc,
And fat and thymol
Were checked by the lab
For a clue to extol.

The phosphotase acid—
Whatever that is—
Was scanned, with its mate
The alkaline fizz.

Now doubtless the patient,
At this stage of the game,
Was beginning to question
The value of fame,

But whatever his thought,
The testing went on—
A blood bilirubin
And stool phenomenon.

The proteins, the ceph flocs,
The bromsulfalein
Were pondered and tracked
As the spirochete fiend.

The calcium, phosphorus,
Urobilinogen,
Cholesterol level—
All tested again.

Egad, what is missing?
The L. E. cell prep!
So timely remembrance
Spared a near-fatal slip.

The bone marrow needled,
By hell and by damn,
The hepar insulted
By dull Silverman.

Bronchoscopy wanted,
The patient rebelled.
So lung-function studies
Had to be held.

All X-rays were made
Of belly and bone
To ferret out signs
Of the sickness unknown.

The heart was considered
A possible blight
And viewed for all evil
By E.K.G. sight.

When these tests were completed,
The frustration was great
That no one could say
What illness—but wait!

A biopsy was needed
Of scalene and lung
And surgeon quite modest,
Though hardly unsung.

He was handsome and full
Of vitality
And allegedly had
Lots of dough-ray-me.

He glanced at the chart,
Gave the patient a stare,
And with confident mien
Was heard to declare

"You medical men
Are a misguided lot
To attempt diagnosis
Without what I've got."

He cut in the neck,
Then tackled the chest,
And sixth-rib removed
With considerable zest,

* Thompson, J., Buechner, H. A., and Fishman, R.: Eosinophilic granuloma of lung. ANN. INT. MED., 48:1134-1145, (May) 1958.

The lung tissue snared
And down the hall sent,
Where studies were made
By the lab diligent.

Then happiness reigned
After many a week;
A name had been found
For this illness unique.

Granulomatous lung
Of eosin hue
Was caught 'neath the lens
Of the microscope view.

The shadows were treated
With magic hormone
The X-ray was cleared
By the great prednisone.

For the patient's appraisal
The case was reviewed,
The doctors expecting
Profound gratitude.

We've tested and analyzed,
Excised and then some.
Now surely we've cured you
Of malady phantom.

You feel better at last,
It's easy to see!
The much-studied patient
Made haste to agree.

Yet did they imagine
Or did he then say
As jubilant friends
Bore him quickly away:

"I've been stewed and tattooed
And you must know what,
But never worked over
With such odd polyglot."

D. F. C.

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 23-26, 1961

Veterans Memorial Auditorium

Des Moines

Letter to the Editor

Sir:

I am replying to the letter of Dr. Tom D. Throckmorton which you published in your November issue, regarding an editorial of yours on my paper "End Results of Surgery for Varicose Veins; 28 Year Study of 200 Cases," which had been published in the NEW YORK STATE JOURNAL OF MEDICINE, on August 1, 1960.

I pointed out in my article that varicose veins are a chronic disease and are incurable by any means. I emphasized that treatment by either surgery or injections is only palliative, and that therapy must be based on a life-long schedule. I pointed out that the complications of stripping operations far outweigh the usefulness of this procedure. I presented my concept that sclerosing treatment followed by mandatory annual check-ups is the treatment of choice.

And now comes confirmation of my findings from Canada. Working independently, Dr. T. L. Fisher has just published a series of cases emphasizing the unfortunate complications which he has discovered following stripping operations for varicose veins. Writing in the CANADIAN MEDICAL ASSOCIATION JOURNAL,* he reviewed some of the serious mishaps following varicose vein surgery.

This is only the beginning, as there will undoubtedly be many other confirmatory reports. I might point out that a leading editorial in LANCET** summarizes the British viewpoint that "complete and permanent cure cannot yet be guaranteed in the surgical management of varicose veins."

I shall pass over Dr. Throckmorton's reference to my experience and standing with the brief observation that I have been chief of a vascular department in two New York hospitals for a period of 35 years, and have published over 60 original papers in this field.

The doctor objects to the fact that of the 200 patients whom I have collected over a period of 28 years, over 50 per cent were treated by ligation alone. Surely he must know that 25 years ago ligation was the treatment of choice. Since my series was collected over a period of a quarter of a century, it necessarily included all the operations that were in vogue. The whole idea of the paper was to review all types of surgery. Furthermore, no lasting cures were obtained by any procedure.

I routinely eradicate all veins, venules and capillary dilatations in every patient who desires normal looking limbs. Dr. Throckmorton assures his patients that their legs cannot be made cosmetical-

* Fisher, T. L.: Medico-legal: Surgery in varicose veins. CANAD. M. A. J., 83:35-36, (July 2) 1960.

** Varicose veins (Editorial). LANCET, 2:391-392, (Sept. 19) 1959.

attains
sustains
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extra
antibiotic
activity

DEC

attains activity levels promptly

DECLOMYCIN Demethylchlortetracycline attains—usually within two hours—blood levels more than adequate to suppress susceptible pathogens—on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. The average, effective, adult daily dose of other tetracyclines is 1 Gm. With DECLOMYCIN, it is only 600 mg.

sustains activity levels evenly

DECLOMYCIN Demethylchlortetracycline susta through the entire therapeutic course, the high ac ity levels needed to control the primary infection a to check secondary infection at the original—or another—site. This combined action is usually s tained without the pronounced hour-to-hour, dose dose, peak-and-valley fluctuations which char terize other tetracyclines.

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LOMYCIN Demethylchlortetracycline retains ac-
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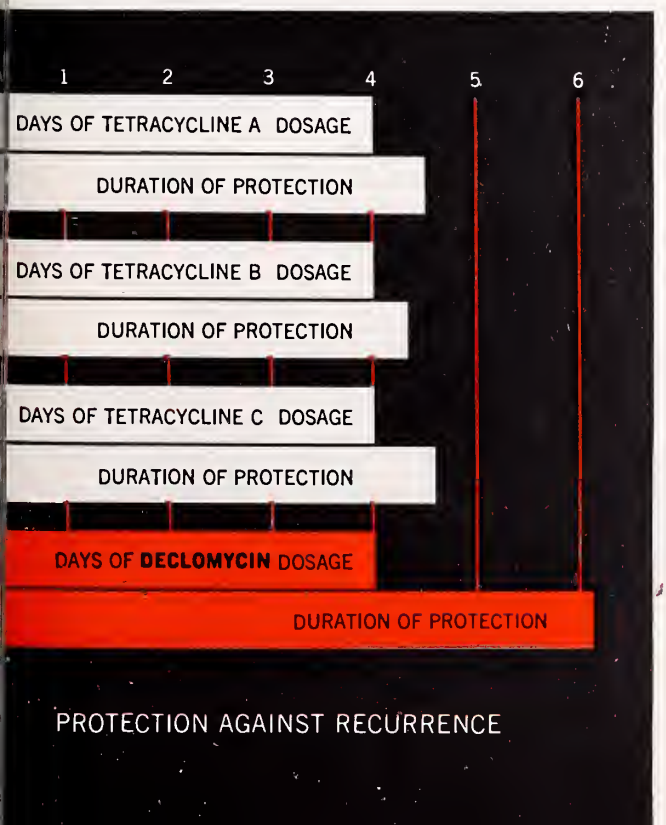
he same as with other tetracyclines...but **total**
age is lower and duration of action is longer.



CAPSULES, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

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SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz. **Dosage:** 3 to 6 mg. per pound body weight per day—divided into 4 doses.

PRECAUTIONS—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under constant observation.

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Pearl River, New York

ly acceptable. I have found that most patients favor cosmetic improvement along with elimination of the large varicosities. The doctor attacks my results by injection treatments of the 200 surgical failures. He misses the boat completely here. There was no claim implied in my paper that injection treatment produces a permanent cure. Rather, it was stressed that not enough patients have been trained to come back regularly for check-up treatment. This paper was not intended to be a study of injection treatment, for this phase of therapy has been voluminously covered in the literature many hundreds of times in the past.

Seven years ago, I published my report on the chronicity of varicose veins as a disease. This has never been disputed. In the present paper, I have pointed out the frequent complication of lymphedema following surgery. Dr. Throckmorton, for some curious reason, calls this "double talk." Is this scientific criticism or impotence? This crippling deformity, which is far worse than the original varicose vein condition, is to all intents and purposes incurable, and cannot be regarded lightly in the contemplation of treatment. As to the frequency of phlebitis complicating varicose veins, the good doctor lightly omits the entire subject.

Let us make no mistake about it. The problem of venous disorders in the lower limbs is a very serious one, affecting a considerable portion of the population. Many trained minds all over the world are concentrating studious and scientific efforts in an attempt to make some progress with this difficult problem. In May, 1960, the French Society of Phlebology, of which I am a member, held its International Congress at Chambery, France. For three days there was a complete program comprising about 100 papers on the latest viewpoints on therapy of venous and lymphatic disorders. One complete day was devoted to injection procedures. Attending were hundreds of vascular specialists from all over the world. There was no American participation at this Congress, and if men with Dr. Throckmorton's viewpoint have their way, there will never be any American participation.

In the interests of brevity, I shall close by stating that scientific progress is not advanced by criticism of this type. I am certain that the great majority of American surgeons are progressive and not self-seeking. Their ultimate acceptance of the viewpoints expressed in my paper is assured, in my opinion.

H. I. BIEGELEISEN, M.D.
133 East Fifty-eighth Street
New York City 22
December 6, 1960

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

DANIEL JOHNSON GLOMSET, B.S., M.D., F.A.C.P.
1881-1960

A Memorial Tribute

Those who knew Dr. Daniel J. Glomset will recognize that his professional life of nearly half a century was dedicated to inspiring continued study and training of the practicing physician.

When the scholarly Canadian physician, Dr. A. Rocke Robertson, resigned as professor of pathology and bacteriology at the Drake University School of Medicine in the late spring of 1911, Dr. Glomset was chosen as his successor, largely upon the strong endorsement of his former chief and teacher, Dr. Ludvig Hecktoen, distinguished pathologist of Rush Medical College, University of Chicago. The personal note of introduction read as follows:

> "Dear Doctor: This will introduce Dr. Daniel Glomset who is well trained in pathology. He may seem a bit brusque at first, but he is a diamond within. I commend him highly. Regards, Sincerely, Ludvig Hecktoen."

He entered upon his new teaching duties with enthusiasm and soon won the regard of students and faculty colleagues. He was an early exponent of integrating the teaching of the basic medical sciences with the clinical sciences as far as possible. By an unfortunate turn of events, his academic teaching period was limited to two years. At the spring meeting in 1913 of the Board of Trustees, Drake University, it was decided to dis-

Dr. Bierring sent us this article late in November. We regret having had to postpone its publication until this issue of the JOURNAL.

D. J. Glomset, M.D.

continue the medical school in Des Moines and merge it with the College of Medicine of the State University of Iowa, at Iowa City.

In the year before the closing of the medical school, Dr. Glomset had interested the professors in the basic medical sciences, and several of the younger members of the clinical faculty, in forming the Study Club, which was to meet weekly during the academic year to discuss the progress of medicine in its various fields. Soon after the closing of the school, the name was changed to Des Moines Library Club and the membership enlarged by including physicians practicing privately in Des Moines, as well as Dr. Arthur Steindler, who had removed to Iowa City to become Professor of Orthopedic Surgery.

In the succeeding 48 years, the vision of Dan Glomset has been realized in a truly significant measure by the accomplishments of the Club in advancing the standards of the science and practice of medicine in this community. Some of its members have gained state and national recognition.

During the following three or four years, Dr. Glomset devoted his efforts to the development of a central clinical laboratory available to practicing physicians. A training school for laboratory technicians was instituted, and quite rapidly the clinical laboratory became an essential part of office practice.

Soon after the entrance of the United States into World War I, Dr. Glomset was appointed First Lieutenant in the Medical Reserve Corps, A.U.S., and assigned to duty at the Rockefeller Institute, New York City, and then transferred to Camp Dodge, near Des Moines, August 20, 1917. During his 10 months' service at Camp Dodge, he had an unusual experience in autopsy examinations due to the high mortality from the so-called "flu" infection. He was promoted to captain October 17, 1917, and to major March 18, 1918. He served overseas from June, 1918, to February 17, 1919, and was discharged on February 20, 1919.

After the completion of his military service, he decided to change his form of practice to that of internal medicine. In preparation for this move, he attended frequent graduate courses, being a faithful attendant at the annual Medical Fortnight arranged by the New York Academy of Medicine.

He did not present any comprehensive articles in internal medicine for publication until 1930, when his article on "Relation of Heredity to Hypertension" appeared, as well as a series of five articles editorially in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY on nephrology entitled, I Bright's Disease—Anatomy and Physiology; II Discussion of Term Nephritis; III Glomerulo-nephritis; IV Oedema; and V Hypertensive Renal Disease.

He was elected to fellowship in the American College of Physicians in 1930, and after the American Board of Internal Medicine was formed in 1936, he was certified as a diplomate of the Board in the Founders Group without examination.

At the annual session of the Iowa State Medical Society in 1930, a Speakers Bureau was established with Dr. Glomset as chairman of the committee to direct it, the other two members of the committee being Dr. Thomas U. McManus, of Waterloo, and Dr. John C. Shrader, of Ft. Dodge. The purposes of the new Bureau were stated as, (1) to increase the efficiency of the practitioner in Iowa; (2) to promote the solidarity of the profession; (3) to develop leadership in each community; and (4) to educate the public in problems of health.

During the following eight years of its operation, it offered a special opportunity for the chairman in the development of educational programs. These programs were carried out through local medical units (a) by members of the faculty of the College of Medicine of the State University; (b) members of the State Medical Society specially qualified for certain tasks, and (c) by occasional outside talent. As a measure of the activities of the Bureau during its first two years, it is cited that 282 speakers addressed 122 meetings of district and county medical societies; 127 speakers addressed 118 lay or semi-scientific meetings; and 38 clinics were arranged throughout the state on heart, chest, skin and children's diseases. Radio programs were arranged weekly at Ames and Iowa City.

In 1938 the State Medical Society decided on a different plan of graduate courses and a new and larger committee was appointed.

Dr. Glomset served as president of the Polk County Medical Society in 1941, the year when the president's page first appeared in the BULLETIN, and the following is quoted from the minutes: "It seems fitting to refer to the excellent and timely contributions each month by President Dr. D. J. Glomset. Each was carefully prepared and with a scholarly flavor that reflected a stimulating and refreshing viewpoint of the various community problems in which the Society was concerned."

In 1939 Dr. Glomset became interested in locating and studying the lesions in a case of common heart block and a case of the less common type of bundle branch block. To his surprise and dismay he could not demonstrate the muscular bundle first described by His in 1893. The failure led to the following series of studies on cardiac conduction. In June, 1940, Dr. Glomset submitted the first of six articles for publication reporting results of a morphologic study of the cardiac conduction system, under the following titles: I, The Sinoatrial node in Ungulates, Dog and Man (1940); II, The Purkinjie System (1940); III, Bundle Branch Block (1944); IV, The Anatomy of the Upper Part of the Ventricular System in Man (1945); V, The Pathogenesis of Heart Block and Bundle Branch Block (1948); and VI, The Intrinsic Nervous System of the Heart (1952). The first four articles appeared in the AMERICAN HEART JOURNAL; the fifth in the ARCHIVES OF PATHOLOGY, and the sixth in the ARCHIVES OF INTERNAL MEDICINE.

Throughout the entire research study, grateful acknowledgement was accorded the technical assistance of Mrs. Anna T. A. Glomset. The coauthor of the fifth publication was Dr. Richard F. Birge, and in the last publication, Dr. Kenneth R. Cross, both pathologists. The study covered in the first five reports was sponsored by the American Medical Association and the Iowa Methodist Hospital, Des Moines, and the last report by the Veterans Administration.

During the study, 125 references in the medical literature were reviewed. In the article "Pathogenesis of Heart Block and Bundle Branch Block," a large number of cases reported in the literature of lesions occurring in the upper ventricular system, and also elsewhere in the ventricles, were cited.

The conclusions were summarized as follows: 1. No anatomic evidence was found to support the myogenic theory of cardiac conduction. 2. The cardiac musculature is under a nervous control similar to that of other muscular tissue, and it is physiologically unsound to draw conclusions concerning cardiac conduction without taking cognizance of the rich intrinsic nervous system of the heart. The bundle of His is demonstrable in the hearts of cattle, horses and other ungulates, but not in dog and man.

The publications of Dr. Glomset and associates have stimulated further research regarding the controversy over the existence of a bundle of His in man, particularly in a series of reports on painstaking dissections of the human embryonic heart. It distinctly influenced medical thought, and is one of his distinct achievements.

The reorganization of the medical services at the Veterans Administration Hospital, Des Moines, in 1946, offered Dr. Glomset a further stimulation for his interest in graduate medical education. He served as acting chief of medicine from September, 1946, to June 20, 1952, during which time he organized a full-time staff representing the several branches of internal medicine, and a resident staff of a high order. He stimulated weekly assemblies of the Staff with special reports by a member of the resident staff, and clinical pathologic conferences. He encouraged the writing of articles by the residents for publication, and the fact that these were accepted by leading medical journals indicated they were well prepared.

A number of new diagnostic procedures were added during his period of service, such as photogastroscopy, peritoneoscopy with direct liver biopsy, and cardiovascular catherization with roentgenology.

During his six years of service, seventeen physicians completed their three years of residency in internal medicine.

On July 1, 1952, Dr. Glomset retired from professional practice and spent a number of years in Santa Barbara, California. But then he returned to Des Moines to be with friends and medical colleagues, and to relive again the happiest memories of his medical life.

A distinctive feature of the annual meeting of the Polk County Medical Society, Jan. 21, 1942, was the address of retiring president Daniel J. Glomset on "The American Way." This was largely a Glomset life story and thrilled its hearers with the adventurous struggles of an immigrant lad, attempts to learn a new language, economic difficulties, fortunate meeting with the Masters, Hecktoen and Herrick, at the University of Chicago, overcoming two "bouts" with tuberculosis and recovery, completion of his medical studies, coming to Des Moines in 1911 and the recognition by his colleagues of his superior talents in medical science and practice—all of which was possibly only in "The American Way."

Such was the impress of Dan Glomset on the medicine of his time, and the spirit in which this memorial tribute is offered.

WALTER L. BIERRING, M.D.

NATIONAL FOUNDATION ISSUES LONG-TERM FINANCIAL SUMMARY

During the period since January, 1938, when it conducted its first March of Dimes campaign, the National Foundation has raised a total of $10,178,729.37 in Iowa, according to a financial summary issued on December 2, 1960. Of that amount, $6,175,214.70 or 62 per cent has been put to use in aiding this state's disease victims and in sponsoring research projects at the State University of Iowa. Until year before last, the National Foundation was called the National Foundation for Poliomyelitis.

Of the remaining 38 per cent of funds donated to the organization by Iowans, a considerable share has been returned in the form of polio vaccine and gamma globulin for use here. The report does not include a full breakdown of these benefits, but over the past 22 years, advances totaling $1,869,606.80 have been made from the national office to meet emergency situations here. Research grants to S.U.I. have amounted to $80,116.50 over the same length of time; the trials of Salk vaccine in Iowa cost the national organization $61,525.44; and it supplied Iowa with Salk vaccine worth $81,454.00 after the trials had demonstrated its efficacy.

The Foundation claims a fund-raising cost of no more than 6.5 per cent, but the costs of administering its various programs are not included in that figure.

Two years ago, when it changed its name, the National Foundation decided to interest itself in birth defects and arthritis, as well as in poliomyelitis. Its March of Dimes is taking place throughout the month of January.

Actions of the AMA House of Delegates

At the Clinical Meeting in Washington, D.C.

F. J. L. BLASINGAME, M.D.
EXECUTIVE VICE-PRESIDENT

A SCHOLARSHIP and loan program for medical students, the status of foreign medical graduates, an AMA membership dues increase, the expansion of voluntary health insurance, health care for the aged and new developments in polio vaccine were among the major subjects acted upon at the American Medical Association's Fourteenth Clinical Meeting held in Washington, D. C., November 28-December 1.

Named as 1960 General Practitioner of the Year was 44-year-old Dr. James T. Cook of Marianna, Florida, who was selected for his dedication to both medical practice and service to the community. Dr. Cook is the 14th recipient of the award.

Speaking at the Monday opening session, Dr. E. Vincent Askey, of Los Angeles, AMA president, called upon the delegates to support not only existing AMA programs but also expansion of new programs necessary to meet the challenges of society. Dr. Askey assured the new administration in Washington of cooperation whenever and wherever possible but emphasized that the AMA will not change its policies merely for the sake of conformity.

The total registration reached 8,170, and was made up of 3,940 physicians and 4,239 guests.

SCHOLARSHIP AND LOAN PROGRAM

The AMA House of Delegates approved a scholarship and loan program proposed by the Special Study Committee of the Council on Medical Education and Hospitals, and also urged that there be local participation in the program at the state and county levels. In commenting on the two-part program, the House approved the following statement by the reference committee:

"This proposed program will provide concrete evidence of the American Medical Association's sincere desire to attract increasing numbers of well qualified young people to enlarge the ranks of our profession. Your reference committee recognizes that the program is wisely designed to allow for its enlargement through the support of individual physicians and other groups. Your reference committee was impressed with the enthusiastic support of this proposal indicated during the course of the discussion. There was indicated a desire that in the final formulation of the administrative details of this program, provision be made for widespread participation by individual physicians as well as county and state medical societies. The program will clearly assist in securing highly talented individuals whose ability and leadership in all areas of medicine will be fostered and at the same time will bring needed financial assistance on a broad basis to medical students under a system in keeping with this Association's belief in individual responsibility."

FOREIGN MEDICAL SCHOOL GRADUATES

Meeting the problem of foreign medical graduates, the House of Delegates adopted a report which included the following statement:

"In order that those foreign physicians who have not yet been certified by the Educational Council for Foreign Medical Graduates might be given further opportunity to enhance their medical education, hospitals would be encouraged to develop special educational programs. Such programs must be of educational worth to the foreign graduate and must divorce him from any responsibility for patient care. Foreign physicians may participate in these programs until June 30, 1961, with approval of the Department of State so that their exchange visa will not be withdrawn before that time. This will also allow the non-certified foreign physician the opportunity to take the April, 1961, Educational Council for Foreign Medical Graduates examination."

AMA DUES INCREASE

The AMA House approved a Board of Trustees report which announced that a dues increase would be recommended at the annual meeting in June, 1961. The report indicated that the amount would be not less than $10 and not more than $25 and would be effective January 1, 1962. The Reference Committee asked the Board to consider an increase in the annual dues of $20, to be implemented over a period of two years: $10 on January 1, 1962, and $10 additional on January 1, 1963.

The House suggested that these funds be used to inaugurate or expand a number of programs including:

1. Financial assistance to medical students.
2. Continuing education for practicing physicians.
3. Health advice to the lay public.
4. Medical research.
5. The expansion by the Communications Division of its program of faithfully portraying the image of the American Medical Association.

It is important, the House emphasized, that the Board of Trustees report recommending a dues increase be transmitted in essence to the grass-roots level.

VOLUNTARY HEALTH INSURANCE

In place of a Board of Trustees report and three resolutions, the AMA House adopted the following substitute resolution:

"WHEREAS, It has been widely recognized that voluntary health insurance is the primary alternative to a compulsory governmental program; and

"WHEREAS, The public has shown its confidence in this voluntary system; and

"WHEREAS, Current social, political and economic developments compel a new and revitalized effort to make voluntary health insurance successful; and

"WHEREAS, The American Medical Association has consistently pledged itself to make available the highest type of medical care; therefore be it

"*Resolved,* That the House of Delegates direct the Board of Trustees and the Council on Medical Service to assume immediately the leadership in consolidating the efforts of the American Medical Association with those of the National Association of Blue Shield Plans, the American Hospital Association and the Blue Cross Association into maximum development of the voluntary, nonprofit prepayment concept to provide health care for the American people; and be it further

"*Resolved,* That similar leadership be undertaken to coordinate the efforts of private insurance carriers through conferences with their national organizations; and be it further

"*Resolved,* That, where feasible, efforts be made to cooperate with representatives of other types of medical care plans, other professional groups, and representatives of industry, labor and the public at large."

HEALTH CARE FOR THE AGED

The House reaffirmed the Association's support of the Kerr-Mills Bill, which was passed last summer, and its opposition to any legislation involving the use of the OASDI mechanism for medical aid to the aged. The delegates also urged all state and local medical societies to cooperate with the appropriate state officials and provide leadership in implementing the provisions of the Kerr-Mills Bill.

In connection with health care for the aged, the AMA House suggested further experimentation in home care programs, homemaker services and visiting nurse services. The delegates also recommended an increased emphasis at all levels of medical education on the new challenges being presented to physicians in the health care of older persons.

POLIO VACCINE

The AMA House agreed with a Board of Trustees report which said:

"In view of the fact that oral polio vaccine will not be generally available in sufficient quantity in 1961 for any large scale immunizing effort, the Board of Trustees of the AMA strongly recommends that the medical profession encourage the widest possible use of the Salk vaccine for the prevention of poliomyelitis. The Salk vaccine has been proved to be effective, and since there are still many segments of the population not immunized against poliomyelitis, every effort should be made to encourage the general public to take advantage of the Salk vaccine without delay."

The Board report was amended to suggest that a proper committee be established by the AMA to study the problems involved in administration of the new oral polio vaccine and to establish guides for physicians to follow when they are approached by various groups and asked for their support in administering oral polio vaccine.

MISCELLANEOUS ACTIONS

In considering a wide variety of resolutions and annual and supplementary reports, the House also:

Approved continuing study and periodic reevaluation of the trend toward *locating physician's offices in or adjacent to hospitals;*

Directed the Committee on Medical Care for Industrial Workers to carry out its duties as previously instructed and to prepare *guides for physician relationships with medical care plans* in conformity with the clear policies already laid down by the AMA House of Delegates;

Approved a set of *guides relating to drug expenditures for welfare recipients;*

Asked the Board of Trustees to study the question of blood replacement responsibility and also the matter of establishing *health insurance fee schedules for surgical assistants;*

Urged the Board to make every effort to reduce the number of physicians who are non-dues-paying members, and approved a three-year study report on the *relationships of physicians not-in-private-practice to organized medicine;*

Requested the Board to present a completed *retirement and disability insurance program* for AMA members at the June, 1961, meeting, and

Agreed that the *General Practitioner of the Year Award* should be continued as at present.

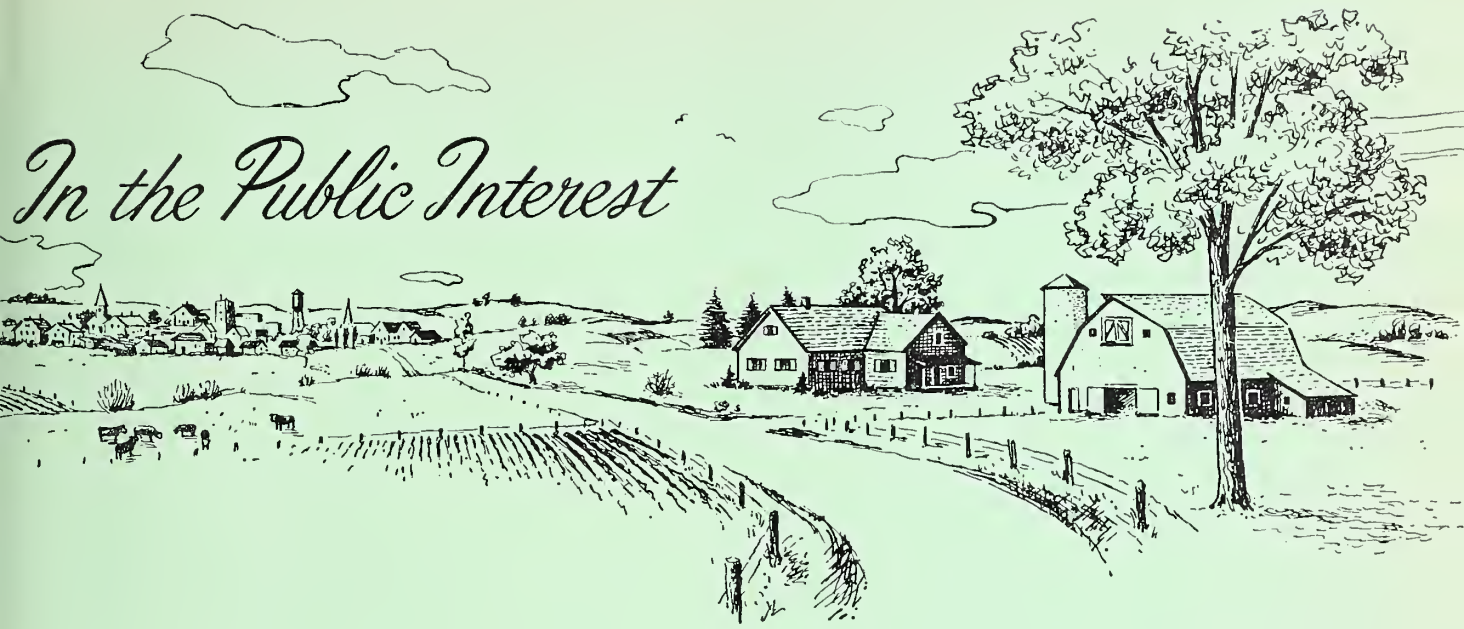
SPEAKERS' BUREAU SCHEDULES

TELEVISION

KVTV—Sioux City, Iowa

(Please check with your newspaper for program time)

January 1.....Heart Surgery
January 8.....Preventing Childhood Accidents
January 15.....Problems of Early Infancy
January 22.....Feeding Problems of Children
January 29.....Mentally Retarded Children



There Must Be No Delay in Setting Up

Medical Assistance to the Aging in Iowa

Members of the 1961 General Assembly of Iowa and Governor Norman Erbe are quite right in pointing out that our state government's sources of revenue are by no means inexhaustible, and in being consequently reluctant to authorize new programs involving considerable expenditures of money. We applaud them for taking that stand. Yet, we hope they will see fit to implement Public Law 86-778 (the Kerr-Mills Bill), modestly and exploratively. In this instance, it is necessary to spend a dollar in order to save two, three or even more.

Public Law 86-778, adopted during the post-convention session of Congress late last summer, offers federal funds to each state—in Iowa's case on approximately a 58 per cent (federal), 42 per cent (Iowa) matching basis—to begin helping the near-needy aged in meeting their health-care costs. Iowa can get funds from Washington for a near-needy assistance plan only after the Legislature has approved an enabling act and has appropriated money to pay the state's share of the costs.

THERE IS A STRATEGIC NECESSITY

We presented the gist of the pertinent sections of the new law on the green page of the December, 1960, JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. In this issue, we want to emphasize the strategic need for establishing an MAA program promptly in this state.

Our lawmakers should qualify Iowa for federal help on this new type of program because, quite paradoxically, by doing so they will help to preserve the state's autonomy in health and welfare administration generally. The new law offers the states their last chance of forestalling a nationwide, altogether inflexible health-service program administered in detail by the federal Department of Health, Education and Welfare. And likewise, the new law offers Iowa its last chance of preserving its traditional pattern of dispensing relief on the basis of need—a pattern in which responsibility for care of the poor is placed first on the individual's family; next on his community or county; and finally on the state and/or federal government, but only through and in conjunction with community or county instrumentalities.

The second major reason for immediate implementation is that if the states take no action, Congress will be left free to adopt any of several fantastically wasteful and otherwise inefficient schemes for providing health care to the aged. The primary concern of our governor and state legislators is, of course, to conserve money raised by state and local levies, but since all taxes come from the same pockets, we feel certain they will want to help prevent the misspending of federal funds, too.

Any of the proposals, such as the Forand Bill, for furnishing health-care services to all bene-

ficiaries of Old Age, Disabled and Survivors Insurance would meet the needs of no more than 65 per cent of our senior citizens! This Social Security approach would provide care to beneficiaries regardless of their economic self-sufficiency and at an initial government expense of 1 billion dollars! The various schemes differ as regards the specific services that they would finance, but none of them would cover more than two or three sorts—hospitalization, nursing-home care and surgery, for example. Thus, any of these arrangements would be almost criminally wasteful, and since the health-care requirements of near-needy old people would remain to a considerable extent unsatisfied, the initial enactment would constitute a mere stepping-stone to the furnishing of ever more varied health services, at government expense, to ever larger and larger numbers of people, still "as a matter of right" rather than on the basis of need!

FULL COVERAGE, BUT ONLY FOR GENUINE NEEDS

As regards *medical* care in particular, most doctors of medicine have remained unconvinced that there are large numbers of elderly Iowans who aren't receiving needed attention because they can't pay for it. They think it is quite well known that, even though most diagnostic and treatment procedures nowadays involve out-of-pocket expenditures for physicians, the doctors are continuing their traditional practice of modifying their fees to suit the patient's ability to pay. But when marginally self-sufficient patients require costly medicines and either hospitalization or nursing-home care—and most cases nowadays do—it may be that they are sometimes billed for sums that they cannot afford to pay.

The main objective of an MAA program should be to help elderly people remain solvent despite occasional expensive illnesses. Assistance should be provided them in financing any of a broad range of services, but it should be provided them strictly in proportion to their individual needs.

The doctors of Iowa recommend (1) that MAA funds be used to supplement and not to supercede existing resources and programs; (2) that first priority be given to comprehensive (in and out of hospital, nursing home, etc.) care and treatment of acute catastrophic illnesses, e.g., stroke, fractured hip, etc.; and (3) that second priority be given to comprehensive care of serious chronic illness. Physicians would prefer to treat patients as they always have, without governmental intervention in the doctor-patient relationship. They look upon the MAA program as one for the benefit of patients, not physicians. They urge that MAA funds be judiciously utilized to give complete coverage for *fewer* cases where the medical and economic needs are severe, rather than to give partial and incomplete coverage for a much larger number of patients where either the medical or the economic necessity is questionable.

EXPERIENCE WILL PROVE THE DEGREE OF ACTUAL NECESSITY

Proponents of Forand-type legislation have created a widespread notion that almost everyone over age 65 is in tremendous need of health care and lacks funds to meet the costs. Physicians, who spend most of their waking hours with sick people, know better. Yet the mistaken impression remains, and we welcome the MAA program as the best possible means of arriving at the truth. If the MAA program demonstrates that the actual need for subsidizing the health-care costs of the elderly is small, this experience should put a stop to the plans of those who would consign all patients to a system of state medicine. If, on the other hand, the need proves to be greater than we think, we shall be glad to have that fact demonstrated and shall be happy to know that a sound MAA program is facilitating care for those who otherwise would have gone without it.

Obviously, the cost of the program will depend (1) upon the number of persons declared eligible, and (2) upon the benefits provided. It is our best estimate, however, that the minimum program would require an annual expense of 10 million dollars. An "excellent" program would cost 35 million dollars, and one including all possible services and facilities would cost 50 million dollars. The 10 million-dollar program suggested by the State Board of Social Welfare would call for $4,152,000 in Iowa funds, and then $5,848,000 in federal money would be automatically forthcoming.

An experimental program would call for at least $2,500,000 annually in state appropriations, it now seems to us, for anything less expensive could well give rise to the assertion that Iowa is either unable or unwilling to solve the problem.

CONCLUSION

There is an acute strategic need for enacting a sound MAA program in Iowa this year. The program will serve to assess the actual need for governmental assistance to the elderly in meeting the costs of health care. A minimum annual appropriation of $2,500,000 is indicated, but one of $4,152,000 would be preferable. Finally, it is a good risk, as well as praiseworthy humanitarianism, for our state government to aid marginally self-sufficient elderly people in purchasing health care whenever its cost is beyond their means, for thus they may be kept otherwise solvent for the remainders of their lives and may have no need to apply for Old Age Assistance.

The Future of Dental Education

GEORGE S. EASTON, D.D.S., M.S.

IOWA CITY

An intelligent prediction for the future of dental education, like any other intelligent forecast, must be predicated upon an understanding of what has gone on in the past and what is transpiring at the time the prediction is made. Dental education is in a progressive state, and a continuing program of improvements is necessary in order to meet new sets of circumstances that are now becoming increasingly apparent. Space will not permit my enumerating all of the factors that may influence dental education in the future, and consequently I shall discuss only a few that are major in character.

DENTAL EDUCATION IS BEING BROADENED

First of all, we must recognize that there has been a change in the philosophy that concerns the role of dentistry in promoting and maintaining health. Dentistry is a relatively young profession, not much over 100 years old. During much of that time, major emphasis has been placed upon the mechanical aspects of the profession—the filling of teeth ravished by decay and the replacing of teeth lost from the dental arch.

In prior years, dental schools were staffed largely by practicing dentists who trained young men in the art of dentistry as they knew it, but who were not trained teachers. They were not well grounded in biologic principles. It fell to them to assist in the development of finger dexterity and to pass along their knowledge, mostly empirical, concerning the handling of the limited number of dental materials then available.

In the mid-twenties only 12 dental schools out of 43 had any funds for the support of scholarly pursuits. A total of $41,000 was available throughout the entire country. Today, most of the 47 schools in the nation have research programs. About 10 years ago, the National Institute of Dental Research instituted a program of research grants for dental schools. By 1958, the total of those grants was approximately $2,500,000. That was a great step forward, but unfortunately, educational budgets could not keep pace. Even today they do not include adequate support for the research programs which are so very important to educational and scientific progress.

The important point is that out of these research programs has come a tremendous increase in knowledge concerning all aspects of dentistry. This, in turn, has changed the status of dentistry as a health science. The dental student of today is learning better ways of repairing and replacing teeth, and is learning to employ far better materials than were formerly used. Because the causes of oral disease and the nature of disease processes are better understood, he is being taught that teeth once thought doomed can be saved for many additional years of service. He is being taught, for example, that the patient with the dread disease commonly known as "pyorrhea" can be helped—that in many instances the patient can be spared the loss of all of his teeth. And more importantly, the student is being imbued with the biologic concept that stresses the close relationship between oral and systemic health.

In the future, dental education will place increasing emphasis upon the biologic aspects of dental science—upon the ways in which oral difficulties affect general health, and vice versa. Through the use of modern dental laboratory aids such as the electron microscope and tooth-and-bone-seeking radioisotopes, the student of tomorrow will learn more about how teeth and bones develop, how saliva affects the gums, how the gums and teeth give clues to bodily health and to biological aging, and, perhaps, how dental decay occurs. As our knowledge expands in these areas, *prevention* will become the byword of the profession, rather than repair and replacement alone.

Out of the research programs that I have mentioned have come tremendous developments for repairing and restoring teeth. Last year, the American Dental Trades Associations said that 80 per cent of current sales of dental equipment and materials consisted of products which only seven years earlier had been research curiosities. There are still some of us who can remember the treadle-operated drill—the so-called "foot engine." Following it came the electric drill, which originally operated at the speed of about 4,000 revolutions per minute. Just a few years ago, improvements brought the speed up to 12,000 r.p.m. Today, new tooth-cutting machinery is available which operates at speeds of approximately 200,000 r.p.m. In addition, new technics have been developed for use of new materials. All of these improvements mean greater effectiveness for the dentist, and less time in the dental chair and greater comfort for the patient. But they also mean that the dental school curriculum must continually be re-evaluated and perhaps modified.

Now if it were possible to put new subject mat-

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ter into the curriculum only as a replacement for discarded material, the problem would be relatively simple. This is not always possible. In most instances, the addition of current material requires an extension of teaching time. The course itself must be extended, or we must find improved teaching methods that will be less time-consuming. The latter approach is already under consideration.

TV IN DENTISTRY INSTRUCTION

The use of TV is an outstanding example of our efforts to do better teaching in less time. It seems possible that in the future dental education will make greater use of this valuable teaching aid. At the State University of Iowa, closed-circuit television is already in use in at least one area. In the Dental College it has been used experimentally. Pictures are beamed onto screens in lecture halls several floors below our operating clinics. There, an entire class is enabled to get a "mouth-side view" of demonstrations that otherwise could be seen only by four or five students gathered around the instructor's chair. Furthermore, these operations can be viewed in microscopic detail by means of the new medium.

This is a fine accomplishment. Perhaps it will require fewer teachers, but certainly it will require instructors better trained in the art of teaching. The idea that a good technician—even a successful dental practitioner—is necessarily a good teacher is not very sound. Good teaching requires a full command of educational technics as well as the possession of professional skills and a full knowledge of the subject matter. This problem is already on its way to solution. Teacher-training programs have already been established on an experimental basis. The S.U.I. dental school is in its second year of such a program. It is probable that in the future these programs will be expanded and all phases of dentistry will be taught more effectively and more efficiently.

THE SHORTAGE OF DENTISTS

One of the major problems facing dentistry is the increasing demand for dental services, due in part to our tremendous growth in population. It is also traceable to the increase in our life span. Today the average American is living 20 years longer than he did at the turn of the century.

During the past 15 years, the total number of dental graduates has barely filled the vacancies created by deaths and retirements. Today, there are about 103,000 dentists in the United States, and they are able to take care of only one-third of the public's dental treatment needs. It is estimated that it would take about 250,000 dentists working for 10 years to eliminate the present backlog of dental defects. By the year 2060 the country will need 220,700 dentists to care for its population, even at the present level of dental care. That number of dentists could by no means staff an enlarged dental care program.

This means that ways must be found to increase the dentists' productivity. Certainly this must be done without lowering the quality of treatment, and without sacrificing the advantages afforded everyone under the present system of medical and dental practice.

TECHNICIANS CAN HELP DENTISTS SERVE MORE PATIENTS

Future dental training will emphasize the effective utilization of auxiliary personnel such as hygienists, technicians and assistants. As a result of a two-year experimental program carried on by our S.U.I. Department of Children's Dentistry, we know that the effective use of chair-side assistants improves the productive capacity of the dentist. Studies carried on by the United States Public Health Service have demonstrated that a dentist with two employees can treat 68 per cent more patients than can the man who works alone. In the future, dental education will do its part in helping solve the dental manpower shortage.

CONCLUSIONS

Public health figures concerning the need for dental treatment on the national scale are appalling. For example, they indicate that our people have 700,000,000 unfilled cavities, that 70 per cent of people over 35 have missing teeth that should be replaced, that 15 per cent of the population under 30 years of age have some degree of peridontal disease (pyorrhea), and that 30 per cent of people over 50 years of age are similarly afflicted.

This situation is due in part to the fact that there are not enough dentists. To an even greater extent, it is due to the fact that our efforts to inform the public of the requirements for dental health have been sadly inadequate. Our people, apparently, have been insufficiently warned of the hazards of dental neglect. Only 56 per cent of persons in families with incomes of over $7,500 pay an annual visit to a dentist. Dental care seems to be given a fairly low priority in the list of an average family's needs. Financing of good dental care needs to be planned more carefully. I think we can predict with some certainty that dental education will help in providing ways for correcting those situations.

Increasing emphasis will be placed on the importance of creating in the public a greater awareness of the systemic consequences of oral disorders and of the economic soundness of periodic dental examinations. There will be better training in the area of practice management, which includes patient education in the use of payment programs facilitating adequate dental prophylaxis

and/or treatment for those in low income brackets.

Summed up briefly, the goal of dental education for the future will be to provide the type of training that will insure a more comprehensive dental care program for the greatest possible number of people.

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Case Studies

AFIBRINOGENEMIA OR HYPOFIBRINOGENEMIA

Diagnosed by Clinical Observation and Therapeutic Response

NEWTON B. WHITE, M.D.

HAMPTON

From all of the source material that I have at hand, afibrinogenemia appears to be a fairly uncommon occurrence, and I feel that perhaps a report of our experience with it last summer may be of value to other physicians who perhaps will sometime encounter this problem.

Since a review of the journals and textbooks immediately available to us proved singularly unrewarding, we shall confine ourselves to the presentation of our single case. If one of our readers knows of an exhaustive survey of the literature on this entity, we should like him to call it to our attention, and if none exists we hope that some able researcher will hasten to supply one.

HISTORY AND PREOPERATIVE STUDIES

The patient was a 34-year-old white female, para 1, gravida 2, who was admitted to Lutheran Hospital, Hampton, on June 8, 1960, for a repeat cesarean section. She had no symptoms of labor, and was considered to be close enough to term for the performance of her second section. An x-ray examination on June 4, 1960, had confirmed that the fetus was of adequate size, and the physical examination and the calculated date of confinement tended to confirm that impression. Her last normal menstrual period had occurred on September 13, 1959, and Naegele's rule put her estimated date of delivery at June 20, 1960.

Her past history was unremarkable, except for a record of idiopathic convulsive disorder controlled by means of Dilantin. Review of her previous chart indicated that her first cesarean section had been performed for cephalo-pelvic disproportion.

The physical examination on admission revealed a well-developed and well-nourished white female who appeared her stated age. The blood pressure was 120/85 mm. Hg, the pulse was 72 beats per minute and regular, the respirations were 16 per minute, and the temperature was 98.6°F. No abnormalities were noted on complete examination, and the uterus was felt to be of a size compatible with a term or near-term pregnancy.

Laboratory studies on admission showed the hemoglobin to be 11.95 Gm. per cent; the red blood cell count to be 4,300,000/cu. mm.; the white blood cell count to be 9,000/cu. mm.; and the blood type to be O Rh negative. The patient's husband was Rh positive, but the physician who had been caring for her reported that there was no elevation in her titer.

SURGERY AND OTHER THERAPY

On June 9, 1960, the patient was delivered of her child by classic cesarean section. A general anesthetic was used because of the history of convulsive disorder. The anesthetic was started at 8:48 a.m., and the child was delivered at 8:52 a.m.

On entering the abdomen through a left paramedian incision, we noted that there was meconium or material of similar appearance adherent to the peritoneum. It seemed to have a covering of serosa, and we suspected that the material had been left following the original section. In order to be sure, we completed the repair of the wound in the uterus and began to take down some adhesions on the posterior surface of the uterus. It was felt unlikely that any rupture of the uterus existed at that time, since the amniotic fluid had not been meconium stained and she was not in labor.

As the adhesions were freed, it was noted that they bled inordinately and investigation of the wound in the anterior uterine wall also revealed rather brisk bleeding in spite of a firm three-layer closure. Additional suturing and ligation and hot

packs were all useless, and the bleeding from the uterus reached alarming proportions. At that time, a supracervical hysterectomy was done rapidly while two units of whole blood were started.

The hysterectomy relieved the massive bleeding, but the areas of the adhesions and the raw posterior surface of the cervix continued to ooze. It should also be noted that the abdominal wound, which had very few bleeders when the operation was started, was now beginning to weep and bleed alarmingly.

It was then noted that there had been no clotting of the blood from all the areas of bleeding for at least 45 to 60 minutes. A tentative diagnosis of afibrinogenemia was then made.

Since we had no fibrinogen on hand, we had to send to a neighboring community to get some. The requested material arrived about one hour after our tentative diagnosis had been made. It is ironic that in a previous conversation with the hospital administrator we had agreed to get some and keep it on hand, but none was as yet in stock when we needed it.

The administration of whole blood seemed to slow the oozing somewhat, but since it was quite apparent that there was still no clotting, we decided to place drains in the cul-de-sac and close the abdomen. There was no specific bleeding point to pick up, and efforts on our part seemed to abraid the raw areas further.

Some fresh whole blood was prepared for administration, and it was given rapidly, for the patient was in early shock.

The fibrinogen arrived as the patient was being placed in her room. Her shock was being treated with whole blood, Trendelenberg position and oxygen.

Two units of fibrinogen (2 Gm.) were administered as rapidly as possible. In a half-hour, her clotting time had been reduced to 5 min. (Lee-White). She began to respond to her treatment for early shock and became more responsive. The only evidence of possible bleeding after that time was the appearance of non-clotting blood on the dressing around her drains. We felt reasonably sure that this was blood that had oozed out during her closure and during the time before the fibrinogen was given.

From the time of the administration of the fibrinogen until the patient was discharged, she progressed nicely, with only a short period of ileus and relative oliguria on the first two postoperative days. Once her hemoglobin level was reestablished, she required no further transfusions.

The child was a female weighing 7 lbs., 13 oz., and did quite nicely. There was no evidence of any Rh incompatibility.

SUMMARY

A case of afibrinogenemia has been presented. We feel that the diagnosis was established by the clinical picture and by the response of the patient to the fibrinogen fraction of blood.

We feel that our experience may be of value to others who may some day encounter the same problem.

ADDENDUM

It is perhaps of interest that the patient had a breast biopsy for a mass in the left breast on August 19, 1960 and had no abnormality in bleeding or clotting and did quite nicely. The lesion was benign.

EDENTULOUSNESS

Toothlessness was the subject of a news release issued on December 6 by the Health Insurance Institute, an intrumentality of the commercial health insurance companies. Reporting on data gathered by the HEW Department, it said that approximately 22,000,000 persons, or 13 per cent of the people in the United States, have lost all of their permanent teeth.

Age, area of residence, income and education all seemed to have a significant bearing upon the rate at which people submit to extractions. Virtually no one under 15 years of age has had all of his or her teeth removed, and only one per cent of those between 15 and 24 years of age have done so. But 22 per cent of those in the 45-54 year age group have none of their "own" teeth, and the figure is 67 per cent for those 75 years of age and older.

Women are more numerous than men in the ranks of the edentulous—14 per cent of all females, as compared with 12 per cent of all males. The rate of toothlessness is slightly higher for rural dwellers (13.1 per cent) than for urban (12.9 per cent). On a regional basis, the Midwest has the highest rate of toothlessness (14.4 per cent). The Northwest and the West each has 12.5 per cent, and the South has 12.3 per cent.

Among members of families with incomes under $2,000 per year, the edentulous rate is 24 per cent, but among those with $7,000 or more per year, the rate is only 9 per cent. Where the head of the family has had less than five years of schooling, the rate is 19 per cent, and where the family head is college-trained, the rate is only 6 per cent.

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 23-26, 1961

Veterans Memorial Auditorium

Des Moines

MEDICAL HISTORY

Rubber Gloves—Why and How

CLYDE ALLISON BOICE, M.D.
WASHINGTON, IOWA

On January 10, 1834, a young physician by the name of Richard F. Cooke, of Hoboken, New Jersey, wrote a manuscript of some 34 pages on the topic "Medical Ethics" and sent it to his old teacher, Dr. Valentine Mott, of Columbia University. In that paper he made the following statement: "A pair of India rubber gloves would be perfectly impenetrable to the most malignant virus."

Some three years earlier, on May 8, 1831, a physician chemist named Samuel Guthrie, of Sacket's Harbor, New York, had reported on his experiments to purify the oil of turpentine. He reported that it dissolves caoutchouc. "This," he said, "I think is an article of considerable importance, as the solution dries rapidly and is not sticky."

Young Dr. Cooke evidently knew of Guthrie's experiments, for he repeated one of his statements in the letter to Mott and added, "I take the liberty of leaving with this also a very nice solution of caoutchouc.* I dissolve it in Guthrie's spirits of turpentine and add a few drops of wintergreen or other essential oil. This, if I mistake not, will become a useful material in the surgeon's hand. I have used it in phlegmonous and erysipelatous inflammations with great benefit, also in sprains and bruises. When applied to a part by means of a brush or the finger the turpentine evaporates and leaves an application, firmly and nicely applied to the most irregular surfaces. I would further add that this is convenient to use in dissecting rooms and in vaginal examinations. By lubricating the hands with it you have an insoluble pair of India rubber gloves—perfectly impenetrable to the most malignant virus."

About 10 years later, Thomas Watson, F.R.C.P. (1792-1882) suggested gloves for antisepsis: "In these days of ready invention, a glove, I think, might be devised, which should be impervious to fluids, and yet so thin and pliant as not to interfere materially with the delicate sense of touch required in these manipulations [gynecological and childbirth]. One such glove, if such shall ever be fabricated and adopted, might well be sacrificed to the safety of the mother, in every labor."

"Whenever puerperal fever is rife, or when a practitioner has attended any one instance of it, he should use most diligent ablution; he should even wash his hands with some disinfecting fluid, a weak solution of chlorine for instance; he should avoid going in the same dress to any other of his midwifery patients; in short, he should take all these precautions which, when the danger is understood, common sense will suggest, against his clothes or his body becoming a vehicle of contagion and death between one patient and another."

These remarkable lines appeared about five years before the Viennese obstetrician Semmelweis published his highly important observations on the etiology of puerperal fever epidemic in lying-in hospitals, 1847-1848, setting forth his discovery that puerperal fever was in most cases transmitted by "decomposed organic matter" on the hands of physicians and students. Semmelweis recommended rigorous hand-washing in a calcium chloride solution before vaginal examinations and medical care in connection with pregnancy and labor, although he did not know what transmitting agent he was destroying.

Although Cooke had hoped to make a glove which should protect the surgeon's hands against "the most malignant virus," and though Watson had wanted one to protect the patient against infection *from* the surgeon's hands, the actual use of rubber gloves in surgical operations in fact resulted from a surgeon's compassion for the sensitive skin of his nurse's hands. Dr. William Halsted, a professor of surgery at the Johns Hopkins Medical School, in Baltimore, tells the story. He was the man who actually introduced the use of rubber gloves in surgical operations. "In the winter of 1889 and 1890—I cannot recall the month—the nurse in charge of my operating room complained that the solutions of mercuric chloride produced a dermatitis of her arms and hands. When in New York I requested the Goodyear Rubber Company to make as an experiment two pair of thin rubber gloves with gauntlets. An assistant was given the

* Caoutchouc is the French word for rubber.

gloves to protect his hands from the solution of phenol (carbolic acid) in which the instruments were submerged, rather than to eliminate him as a source of infection.

"Thus the operating in gloves was an evolution rather than an inspiration or happy thought, and it is remarkable that during the four or five years when as operator I wore them only occasionally, we could have been so blind as not to have perceived the necessity for wearing them invariably at the operating-table. It is noteworthy that none of the many surgeons, foreign and American, who visited our clinic in those years should have recognized the desirability of eliminating the hands as a source of infection, by the wearing of gloves."

The nurse used the gloves with complete satisfaction as a protection against the sublimate bichloride of mercury, but surgeons were very slow in adopting them. Dr. Joseph C. Bloodgood, an associate of Dr. Halsted's, was the first to wear them routinely in performing clean operations. A picture of Bloodgood's clinic taken by the anesthetist, Dr. James F. Mitchell, sometime during the 1890's, shows Bloodgood wearing the gloves, and shows him and all his assistants in short-sleeved coats and with no coverings for their arms or faces. A later picture shows Bloodgood and his assistants in rubber gloves and long-sleeved gowns.

I happen to have been the first physician in my community to wear rubber gloves, but I don't remember the year when I started. I am sure, however, that I was wearing long-sleeved gowns at home delivery cases, and home and hospital surgery before 1912.

Several years ago I became acquainted with a woman who had been a surgical nurse at Augustana Hospital, in Chicago, during the early years of this century, and she told me of the great number of pairs of white cotton gloves that used to be kept in readiness for the surgeons there. The principal user was Dr. A. J. Ochsner. He became quite famous, and Augustana shared in his popularity. My son, Dr. William A. Boice, is now connected with that institution, and I asked him for some data.

Sometime before 1916, Dr. A. J. Ochsner had a serious arm infection following some surgical procedure. Whether he had worn rubber gloves before that accident, there is no record, but he certainly did so afterward. My son tells me that Dr. A. J. began using rubber gloves in 1915, but did not wear long-sleeved gowns until 1917.

Dr. Edward Ochsner is reported to have worn white cotton gloves in all dressing cases—a different pair for each patient. He also wore such gloves in changing his shoes. He kept up this practice until sometime in the 1920's.

I am informed that the Goodyear Rubber Company has no records on file regarding the firm's early manufacture of rubber gloves for use in surgery. Of course there were heavy rubber work gloves on the market at the beginning of the century—ones handy for dirty jobs about the house and barn. As a matter of fact, a long-time friend tells me that when she was in medical school in 1902, she wore such gloves in the dissecting room.

The rubber-glove era came in just as bacteriology was beginning to get a great deal of attention. Dr. Nathaniel Chapman, who was to become the first president of the AMA in 1847, had told his classes in 1833, "We fight an enemy we do not know." The war against bacteria was an evolution, not an inspiration.

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EVIDENCE OF DECREASE IN SURGICAL THYROID DISEASE

The overall incidence of thyroid disease has decreased during the past 23 years, according to an article by Dr. Edson F. Fowler, of Evanston, in the November, 1960, issue of ARCHIVES OF SURGERY. In a study of the records at Illinois Research Hospital covering the years 1936 to 1959, he found that thyroid admissions there had fallen from 14.9 per cent of general surgical admissions in the period 1936-1940 to 5.2 per cent in the period 1956-1959. Part of the decline, he explained, was due to the introduction of iodized salt in the area, and the use of drugs and radioactive iodine instead of surgery was also an important factor.

Among the different types of thyroid disease, he said that the incidence of toxic diffuse goiter and toxic nodular goiter appear to have decreased, but thyroiditis, non-toxic nodular goiter appear to have increased. Surgery for toxic diffused goiter declined from about 44 per cent of all thyroid cases between 1936 and 1940, to about 31 per cent between 1956 and 1959. Surgery for toxic nodular goiter declined from about 34 per cent in 1936-1940, to about 11 per cent in 1956-1959. During the same period, the incidence of thyroiditis operated upon increased sevenfold, from 0.8 per cent to 5.6 per cent; the incidence of nontoxic nodular goiter operated upon increased from 17.7 per cent to 61.8 per cent; and the incidence of cancer of the thyroid operated upon increased from 2.1 per cent to 6.9 per cent.

Dr. Fowler said he believes the reduction in operations for toxic diffuse and toxic nodular goiter "indicate a true reduction in the frequency" of these types of goiter. However, he said, the increase in surgery for the other three types of thyroid disease cannot be entirely explained, thus far.

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

REGULATION OF THE INORGANIC ION CONTENT OF CELLS (Ciba Foundation Study Group No. 5), ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P., and *Cecilia M. O'Connor*, B.Sc., (Boston, Little, Brown and Company, 1960. $2.50).

BLOOD DISEASES OF INFANCY AND CHILDHOOD, by *Carl H. Smith*, M.D. (St. Louis, C. V. Mosby Company, 1960. $17.00).

RESUSCITATION OF THE NEWBORN INFANT, ed. by *Harold Abramson*, M.D. (St. Louis, C. V. Mosby Company, 1960. $10.00).

INFECTIOUS DISEASES OF CHILDREN, SECOND EDITION, by *Saul Krugman*, M.D., and *Robert Ward*, M.D. (St. Louis, C. V. Mosby Company, 1960. $13.00).

PROGRESS IN THE TREATMENT OF FRACTURES AND DISLOCATIONS, 1950-1960, by *Thomas B. Quigley*, M.D., and *Henry Banks*, M.D. (Philadelphia, W. B. Saunders Company, 1960. $2.50).

PROCEDURES IN VASCULAR SURGERY, by *Richard Warren*, M.D. (Boston, Little, Brown and Company, 1960. $12.00).

BOOK REVIEWS

THE LIST METHOD OF PSYCHOTHERAPY, by a symposium of authors, with an introduction by Jacob S. List, (New York, The Philosophical Library, Inc., 1960. $7.50).

The volume under discussion consists of papers representing several aspects of what is described as a method of psychotherapy. There is a section entitled "Therapist Selection and Training," one called "Higher Education as Therapy," and a final one called "Sexual Inversion and Reorientation."

In essence, it would appear that the educators and/or social psychologists who are the authors of the volume believe that the creation of a different environment and the substitution of one set or bent of interests for another can be called psychotherapy. They seek their objective by establishing a relationship between the "client" and some other individual, and encourage this relationship by close and apparently social contacts with the therapist as well as with other patients, ultimately encouraging the client to become more creative—i.e., willing to accept more in the way of higher education.

Throughout the history of medicine, it is apparent that successful therapy of any kind depends upon the capacity—in fact awaits the capacity—of the profession to establish an accurate, clear and unmistakable diagnosis. The establishment of a diagnosis then renders possible the prescribing of an accurate kind of therapy and the prediction of the outcome of treatment. It is with this orientation that the medical profession has made advances in treating physical and emotional diseases.

At no point in this book could I find this diagnostic attempt clearly delineated. At no point does there seem to be a variation in therapy from one kind of illness to another. It apparently is assumed that the presence of emotional illness, the presence of symptoms or the fact that an individual regards his life as unsatisfactory is sufficient cause for the initiating of therapy. In the eyes of the medical profession, none of these would be sufficient reason to begin treatment.

In short, this volume seems to have no particular significance so far as medicine is concerned.—*Howard V. Turner*, M.D.

SYNOPSIS OF GYNECOLOGY, FIFTH EDITION, by *Robert James Crossen*, M.D., *Daniel Winston Beacham*, M.D., and *Woodward Davis Beacham*, M.D. (St. Louis, The C. V. Mosby Company, 1959. $6.50).

As the title implies, this book touches lightly on almost all facets of a gynecologic practice, from instruments to how to buy malpractice insurance.

All in all, it is a handy, quick reference manual for the busy practitioner to use when he needs a hint on diagnosis and treatment.—*Claude H. Koons*, M.D.

CLINICAL AUSCULTATION OF THE HEART, SECOND EDITION, by *Samuel A. Levine*, M.D., and *W. Proctor Harvey*, M.D. (Philadelphia, W. B. Saunders Company, $11.00).

This is an amplification of the first edition of this book, and there is much that is new because of the tremendously increased interest in auscultation since the advent of cardiac surgery and cardiac catheterization. Diagnoses can now be verified at surgery or by the newer diagnostic methods, and many former concepts have now been changed. The field of phonocardiography has come into its own, for it can be used to document ausculatory findings and to assist in their timing.

There is an excellent discussion of the proper type of stethoscope (and the majority of stethoscopes in use are most inadequate) and the technics of systematic examination of the heart.

The significance of increased or diminished heart sounds, the splitting of heart sounds, and the effect of inspiration on them are worthy of considerable attention. These findings, and their correlation with other signs, are completely discussed. Murmurs and rubs, likewise, are covered most completely, and the

accompanying reproductions of electrocardiograms and phonocardiograms are superb.

The physician who has mastered the principles in this book will save some of his patients the necessity of undergoing more extensive tests, including cardiac catheterization. Even the latter can be misleading if the physician is unable to correlate all of the findings in the manner described in this volume.—*Charles H. Gutenkauf,* M.D.

SIGHT, A HANDBOOK FOR LAYMEN, by *Roy O. Scholz,* M.D. (New York, Doubleday & Company, 1960. $3.50).

As the title implies, this book has been written to orient the public about the functions and diseases of the eye. It seems to be about the proper size—not too short, and not long enough to go into too much detail.

There are chapters on anatomy and physiology of the different structures. The conditions requiring the wearing of glasses, farsightedness, nearsightedness and astigmatism are explained. The commonest diseases such as cross-eye, glaucoma, cataract and injuries are adequately covered.

At a time when nonmedical professions are trying to persuade the public that they are qualified to handle all eye problems, it is important to impress people with the fact that a pair of glasses is not a remedy for all eye difficulties, and that most such conditions require medical knowledge for proper handling.

It is to be hoped that this book will be read widely by the general public, and that it will help to counteract the influence of the various cultist publications.—*Henry H. Gurau,* M.D.

CLASSICS OF MEDICINE AND SURGERY, collected by *C. N. B. Camac.* (New York, Dover Publications, 1960. $2.25).

The Dover editions are paperbacked republications of important works on science. They include works in such fields as astronomy, mathematics, medicine, physics and geology. Being paperbacks, they are reasonably priced, but the manuscripts they contain are important to have in one's library. This particular volume contains materials copyrighted in 1909 by W. B. Saunders and Company, and it includes almost verbatim reproductions of original articles by such masters as Lord Lister, Wm. Harvey, Laennec and Jenner on their epoch-making discoveries in medicine. Preceding each reproduction is a short biography, and afterward is a list of the author's writings.

In this day of rapid advances in medicine, we often get lost in daily minutiae as a result of reading unimportant articles in current journals. It is a comforting and fascinating experience to relax in one's easy chair and dream of what medicine must have been like in the days when these pioneers were struggling against the dogma of their times. How small our troubles are! Think of Harvey's Herculean struggle against the pronouncements of Galen, in trying to prove the seemingly obvious fact that the blood circulates. Think of Jenner's fight against the superstitions of his day!

The young doctor should read books like these on the history of medicine, but he seldom does. I have found astounding gaps of this sort in the educational backgrounds of young internes. It seems that only as we grow a little older do we begin to revere the accomplishments of the early medical giants. And this is not a recent development, for Osler found it to be true in his day. And yet, how important it is for young as well as older physicians to read about such epoch-making events as the discovery of percussion and the introduction of anesthetics. What bigger men we become as a result!—*Daniel A. Glomset,* M.D.

FEDERAL EMPLOYEE PROGRAM OF BLUE SHIELD

Iowa Blue Shield has had a number of reports showing that many federal employees do not understand how they are to apply for supplemental benefits. This is particularly true of home and office calls, which are some of the many supplemental benefits available.

Supplemental benefit claims are not handled by Iowa Blue Shield, but are processed in Washington, D. C., at the address shown on the back of the supplemental claim form. Copies of that blank are available where the federal employee works, or from Iowa Blue Shield.

Charges for all supplemental benefit services must be accumulated for the entire illness during any one benefit period, and one supplemental claim form must be submitted for them all. The benefit period begins on the first day a person receives care by a physician and ends 12 months later, or after the person has gone 90 days without covered medical expenses, whichever comes first. A percentage of the supplemental benefits is paid after the deductible has been met. Employees who chose the high option program must meet a $100 deductible. The supplemental benefits plan pays 80 per cent of the remainder, and the other 20 per cent is paid by the employee. Those choosing the low option program must pay a $200 deductible. The supplemental benefits plan pays 75 per cent of the remainder, and the other 25 per cent is paid by the employee.

The deductible applies only to supplemental benefits, and not to basic benefits.

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Mental Health

Medical Use of Hypnosis*

AMA Council on Mental Health

The following report on medical use of hypnosis was developed by the AMA Council on Mental Health constituting itself as a committee of the whole under the chairmanship of Dr. M. Ralph Kaufman, Council member. The conclusions arrived at herein have come about as a result of a two-year study of medical use of hypnosis. The necessity for this was brought sharply to the attention of the Council by increasing interest in this area; there were frequent inquiries from physicians and dentists throughout the United States as to the effectiveness of hypnosis in the medical and dental fields and numerous requests from physicians for information about where proper and thorough training could be obtained.

Preliminary investigation by the Council revealed that centers for training, under proper auspices, were sharply lacking. It was also noted that many courses in hypnosis were being offered to physicians and dentists by groups who, in the Council's opinion, were not properly accredited by any professional school or university. Likewise, courses were being offered to physicians and dentists on the basis of a 5-lesson or 10-lesson course in hypnosis, offered solely as correspondence courses. During the past two years, the Council has consulted with many physicians and dentists known as expert practitioners of hypnosis and also with many persons of other professions who have had a deep interest in and intimate connection with hypnosis and with research in hypnosis.

In substance, the Council's report indicates that there are definite and proper uses of hypnosis in medical and dental practice in the hands of those who are properly trained. It indicates, also, that there is a severe lack of the necessary training facilities, under proper auspices, in the United States and that such centers should be established. The report thoroughly condemns the use of hypnosis for entertainment purposes, because of the adverse effects it can bring when used by persons not thoroughly medically or psychiatrically oriented. This report was approved by the Board of Trustees and the House of Delegates of the American Medical Association at its June, 1958, meeting in San Francisco.

RICHARD J. PLUNKETT, M.D., *Secretary*

The history of hypnosis since the time of Mesmer has been characterized by a series of curious cycles alternating between great interest and almost complete rejection. This phenomenon in itself is an indication of the somewhat mystical aura that has surrounded the subject throughout the years. Recently, owing to a concatenation of circumstances, there has been a reawakened interest in hypnosis. In part, the experience of World War II contributed to this interest.

The Council on Mental Health of the American Medical Association has for some years received numerous inquiries from physicians throughout the United States relating to the subject of hypnosis, many of them asking for information regarding training programs in this area. A group of serious workers in medicine has been reporting on various aspects of the utilization of hypnosis. In addition, the dental profession has become interested in its use in relation to its own practice. Concurrently, "fringe" groups have been exploiting hypnosis through the press, radio, and television. Overpopularization in this as in other areas of medicine usually leads to oversimplification. Overdramatized events are seized on to the general detriment of sober scientific work.

A subcommittee of the British Medical Association has issued an excellent report, which appeared in the BRITISH MEDICAL JOURNAL, April 23, 1955, and with which the Council is in essential agreement.

In view of the total situation, the Council on Mental Health constituted itself as a committee of the whole to study the medical use of hypnosis. Some outstanding authorities in this field were invited to participate in several committee meetings, and in addition others were requested to give their opinions through correspondence. The Council expresses its thanks and appreciation to them for their excellent collaboration in this study. It is to be emphasized that the responsibility for this

* Reprinted from JAMA, September 13, 1958, **168**:186-189. For the list of books and articles on hypnosis that the Council appended to its report, readers are referred to the above-mentioned issue of JAMA.

report and the recommendations contained therein are those of the Council.

The work of the Hypnosis Committee was limited to the specific theme of the medical use of hypnosis in its therapeutic aspects, since this seemed to be the most relevant area for the Council's consideration.

There was unanimous agreement that there was no need at this time to question the validity of the various phenomena elicited by hypnotic techniques. Actually, in the literature of hypnosis practically all of these phenomena have been noted in one way or another since the time of Mesmer. In spite of this, however, it is still difficult to arrive at a formulation of hypnosis that is completely satisfactory. The subcommittee of the British Medical Association presented the following definition, with which there was agreement in general:

> [Hypnosis is] a temporary condition of altered attention in the subject which may be induced by another person and in which a variety of phenomena may appear spontaneously or in response to verbal or other stimuli. These phenomena include alterations in consciousness and memory, increased susceptibility to suggestion, and the production in the subject of responses and ideas unfamiliar to him in his usual state of mind. Further, phenomena such as anesthesia, paralysis and the rigidity of muscles, and vaso-motor changes can be produced and removed in the hypnotic state.

The Committee emphasized certain regressive aspects of hypnosis. It also stressed the fact that hypnotic phenomena were of a wide variety and should not be limited only to the so-called trance state.

In order to begin to understand these phenomena it is necessary to place hypnosis within the general framework of psychodynamic psychology and psychiatry. This has implications not only for the theoretical understanding of hypnosis but also for its therapeutic application and will, therefore, be related in an important way to any teaching and training program. In a sense it is unfortunate that the induction of hypnosis is generally so simple a matter that it requires little or no technical skill or training. This, in itself, represents one of the main hazards in its utilization, since it lends itself to oversimplification and overdramatization with a production of spectacular phenomena that are meat for the charlatan. The use of hypnosis has a recognized place in the medical armamentarium and is a useful technique in the treatment of certain illnesses when employed by qualified medical and dental personnel.

It has already been emphasized in this report that a background of psychodynamic psychology and psychiatry is essential in order to understand the phenomena of hypnosis. It is equally important to insist on the fact that the utilization of hypnotic techniques for therapeutic purposes should be restricted to those individuals who are qualified by background and training to fulfill all the necessary criteria that are required for a complete diagnosis of the illness which is to be treated. Hypnosis should be used on a highly selective basis by such individuals and should never become a single technique used under all circumstances by a therapist. No physician or dentist should utilize hypnosis for purposes that are not related to his particular specialty and that are beyond the range of his ordinary competence. As an example, a trained and qualified dentist might use hypnosis for hypnoanesthesia or hypnoanalgesia or for the allaying of anxiety in relation to specific dental work. Under no circumstances would it be proper for him to use hypnosis for the treatment of neurotic difficulties of his patient. The surgeon, obstetrician, anesthesiologist, gynecologist, internist, and general practitioner may legitimately utilize these techniques within the framework of their own particular field of competence.

A great deal has been said about the hazards of hypnosis, and this is still a controversial matter. One of the members of the conference, who is in a somewhat unique position since he has been consulted professionally by many colleagues who have utilized hypnosis and has also made a survey of results, presented material which indicated that in a number of patients there were harmful results which included the appearance of psychotic conditions and other complications. On the other hand, other consultants either personally or through correspondence indicated that they were not aware of any such harm resulting from the use of hypnosis. This is an area for further research.

CONCLUSIONS

General practitioners, medical specialists, and dentists might find hypnosis valuable as a therapeutic adjunct within the specific field of their professional competence. It should be stressed that all those who use hypnosis need to be aware of the complex nature of the phenomena involved.

Teaching related to hypnosis should be under responsible medical or dental direction, and integrated teaching programs should include not only the techniques of induction but also the indications and limitations for its use within the specific area involved. Instruction limited to induction techniques alone should be discouraged.

Certain aspects of hypnosis still remain unknown and controversial, as is true in many other areas of medicine and the psychological sciences. Therefore, active participation in high-level research by members of the medical and dental professions is to be encouraged. The use of hypnosis for entertainment purposes is vigorously condemned.

Iowa Chapter of the American Academy of General Practice

SIXTH ANNUAL REFRESHER COURSE

For the sixth time, the Iowa Chapter of the American Academy of General Practice is very pleased to sponsor, with the College of Medicine of the State University of Iowa, the annual Refresher Course for the General Practitioner. The Course will be given at the University Hospitals in Iowa City February 21 through 24, 1961. The registration fee for Academy members will be $5.00 either for one day or for the full course, so all Academy members should avail themselves of this wonderful chance to refresh themselves in the knowledge of medicine in general. For non-members of the Academy attending the Course, the registration fee will be $15.00 per day or $40.00 for the full course.

On Thursday evening, February 23, the Iowa Chapter once again will honor the senior medical students and participating faculty at a banquet to be held at the Elks Club, in Iowa City. Marion Laboratories of Kansas City will again be hosts for their famous oysters on the half shell and beer preceding the banquet. The speaker for the evening is Dr. Carl Winters, of Chicago, an outstanding personality for whose appearance the Chapter is indebted to the General Motors Corporation.

Guest speakers on this program, other than University faculty, will be Charles W. McLaughlin, Jr., M.D., F.A.C.S., clinical professor of surgery at the University of Nebraska College of Medicine, and Willis Brown, M.D., professor and head of the Department of Obstetrics and Gynecology at the University of Arkansas, Little Rock. Following is the program for the four days.

PROGRAM

Tuesday, February 21, 1961

8:15 Registration

8:50 Welcome and Orientation
- R. T. Tidrick, M.D.
- H. W. Mathiasen, M.D., president, Iowa Chapter of American Academy of General Practice

SURGERY

9:00 Respiratory Resuscitation—L. J. De Backer, M.D.

9:20 Treatment of Intractable Pain—H. B. Locksley, M.D.

9:45 Farm Injuries—C. W. McLaughlin, Jr., M.D.

10:30 Intermission

11:00 Symposium: Diagnosis and Treatment of Superficial Neoplastic Skin Lesions
- F. D. Staab, M.D., Moderator
- R. G. Carney, M.D.
- W. C. Huffman, M.D.
- H. B. Latourette, M.D.

12:30 Luncheon—Doctors' Dining Room

1:30 Small Group Conferences
- Treatment of Post Phlebitic Syndrome—J. A. Gius, M.D.
- Thoracic Injuries: A Demonstration of Pneumothorax Treatment—Dr. D. M. Sensenig, M.D.
- Transportation of Patients With Head and Spine Injuries—F. M. Skultety, M.D.
- Office Urology—R. H. Flocks, M.D.
- Otolaryngology Problems—D. M. Lierle, M.D.
- Post Gastrectomy Syndromes—J. A. Buckwalter, M.D.
- Minor Hand Injuries—A. E. Flatt, M.D.
- Current Status of Cancer Chemotherapy—R. C. Hickey, M.D.
- Office Ophthalmology—F. C. Blodi, M.D.
- Common Infections and Antibiotic Therapy—Lyle G. Freimark, M.D.
- Problems in Peripheral Arterial Insufficiency—M. S. Lawrence, M.D.
- Demonstration and Discussion of the Sigmoidoscopy in Diagnosis—R. T. Tidrick, M.D.

2:30 Problems in Geriatrics Surgery—S. E. Ziffren, M.D.

3:00 The Acute Surgical Abdomen in Infancy and Childhood—C. W. McLaughlin, Jr., M.D.

3:45 Intermission

4:15 Surgical Problems of Lower End of Esophagus—E. S. Brintnall, M.D.

4:45 Symposium: Prophylaxis and Treatment of Tetanus
- J. Moyers, M.D., Moderator
- A. P. McKee, M.D.
- W. K. Hamilton, M.D.
- E. E. Mason, M.D.

Wednesday, February 22, 1961

PEDIATRICS

(Each period will be organized as a teaching clinic with the discussion centered around specific cases and with time allowed for questions and answers.)

9:00 Diagnosis of Mental Retardation, With Case Presentation—R. B. Kugel, M.D., and T. Alexander, Ph.D.

9:45 Newer Concepts of Mongolism, With Case Presentation—H. Zellweger, M.D.

10:30 Intermission

10:45 Recent Changes in the Clinical Interpretation of Chorea—J. C. MacQueen, M.D.

11:30 The Management of Diabetes in Children—C. H. Read, M.D.

12:15 General Question and Answer Period

12:30 Luncheon—Doctors' Dining Room

1:30 Cardiac Problems During the Neonatal Period—J. A. Noonan, M.D.

2:15 Causes and Treatment of Diarrhea in Infancy—W. W. McCrory, M.D.

3:00 Intermission

3:15 Choice of Antibiotics for Treatment of Common Infections—W. E. Anderson, M.D.

4:00 Drug-induced Aplastic Anemia in Childhood—R. E. Carter, M.D.

4:45 General Question and Answer Period

Thursday, February 23, 1961

OBSTETRICS AND GYNECOLOGY

9:00 Varicose Veins—A Pregnancy Complication—C. P. Goplerud, M.D., and J. A. Gius, M.D.

9:30 Management of Pelvic Floor Relaxation—Willis Brown, M.D.

10:00 Adolescent Gynecologic Problems—James P. Jacobs, M.D.

10:30 Intermission

10:45 Current Treatment Concepts of Genital Malignancy—W. C. Keettel, M.D.

11:15 Recent Advances in Obstetrics and Gynecology:
- Paracervical Block—W. B. Goddard. M.D.
- Simplified Episiotomy Repair—W. C. Keettel, M.D.
- New Technic of Circumcision—J. P. Jacobs, M.D.
- Use of the Safar Airway—C. P. Goplerud, M.D.
- Use of Vitamin K—W. W. Brown, M.D.
- Determination of Genetic Sex—J. T. Bradbury, Sc.D.

11:45 Question and Answer Period

12:30 Luncheon—Doctors' Dining Room

1:30 Small Group Conferences
- Obstetrical Analegesia—J. P. Jacobs, M.D.
- Office Gynecology—Willis Brown, M.D.
- Rational Use of Hormones—J. T. Bradbury, Sc.D.
- Obstetrical Hemorrhage—W. B. Goddard, M.D.
- Infertility Problems—W. W. Brown, M.D.
- Induction of Labor—W. C. Keettel, M.D.
- Postpartum Care—C. P. Goplerud, M.D.
- Problems of Newborn—R. B. Kugel, M.D.
- Nursing Care of Patient in Labor—Anna Overland, R.N.

2:30 Estimation of Pelvic Capacity—Willis Brown, M.D.

3:00 Legal Aspects of Sterilization—Professor Frank R. Kennedy, College of Law

3:30 Hydatid Mole—W. B. Goddard, M.D.

3:45 Intermission

4:00 Symposia—Abortions With Case Presentations
- Threatened Abortion—C. P. Goplerud, M.D.
- Habitual Abortion—W. W. Brown, M.D.
- Late Abortion—W. B. Goddard, M.D.
- Septic Abortion—Willis Brown, M.D.
- Hormonal Aspects—J. T. Bradbury, Sc.D.

6:00 Social Hour—oysters on the half shell and beer—Elks Club, Iowa City, Iowa. (Courtesy of Marion Laboratories, Kansas City, Mo.)

7:00 Banquet for Senior Medical Students and Participating Faculty

Friday, February 24, 1961

MEDICINE

9:00 Recruitment of Medical Students—R. C. Hardin, M.D.

9:10 Evaluation of a Drug—L. A. Woods, M.D.

9:40 Iatrogenic Disease—W. B. Bean, M.D.

10:10 New Anti-hypertensive Agents—W. Kirkendall, M.D.

10:30 Intermission

10:45 Management of the Out-Patient Alcoholic—J. Clancy, M.D., and Staff

12:05 Discussion

12:30 Luncheon—Doctors' Dining Room

1:30 Small Group Conferences
- Thyroid Problems—E. L. DeGowin, M.D.
- Treatment of the Patient With Hypertension—W. R. Wilson, M.D.
- Diabetes Mellitus—D. B. Stone, M.D.
- G.I. and Liver Problems—R. D. Eckhardt, M.D.
- Problems in Management of Patients With Atherosclerosis, Hypercholesterolemia and Thrombosis—W. E. Connor, M.D.
- Allergic Problems—P. M. Seebohm, M.D.
- Pulmonary Disease—G. N. Bedell, M.D.
- Infectious Disease—I. M. Smith, M.D.
- Common Cardiologic Problems—L. E. January, M.D.
- Hematologic Problems—W. M. Fowler, M.D., R. F. Sheets, M.D., and H. E. Hamilton, M.D.
- Case Demonstrations in Neurology (two sections)—A. L. Sahs, M.D., and Staff

2:30 The Endocrine Eye Lesion of Thyroid Disease—H. E. Hamilton, M.D.

2:50 Congenital Heart Disease in Adults—June M. Fisher, M.D.

3:10 Intermission

3:30 Megaloblastic Anemias—R. F. Sheets, M.D.

4:00 Vascular Disorders of the Nervous System—A. L. Sahs, M.D., and Staff

STATE DEPARTMENT OF HEALTH

COMMISSIONER

VACCINIA IMMUNE GLOBULIN (VIG)

A program for the preparation and distribution of vaccinia immune globulin (VIG) has been established by the American National Red Cross in cooperation with the Armed Forces of the United States as another regular service of the Red Cross Blood Program. This hyperimmune gamma globulin is prepared from blood provided by the Armed Forces from recently vaccinated servicemen. It contains a high titer of antibodies effective in arresting abnormal infections with vaccinia virus, the agent used in vaccination to produce immunity to the related but dangerous virus of smallpox.

The importance of universal vaccination against smallpox has been demonstrated repeatedly. Thousands of cases continue to occur in those parts of the world in which precautions against the disease are inadequate. This universal vaccination is more important than ever because of the increase in rapid world-wide transportation.

There are two situations related to smallpox prevention in which something more than vaccination is needed. The first is the situation in which there has been a known exposure to smallpox and an added boost of immunity is needed. The second problem presented is the rare occurrence of complication from the vaccination itself. These situations represent medical emergencies in which adequate treatment must be given as early as possible. VIG has been developed to give the physician a specific means of managing these conditions.

The American National Red Cross has undertaken a program for the production and distribution of sufficient VIG to meet the needs of the country. Since the scant supply of this rare blood fraction could be dissipated if it were used when not indicated, seven physicians on the staffs of prominent medical colleges throughout the country have been appointed as volunteer Red Cross consultants to assist in the distribution. Any physician who feels that VIG might be required for one of his patients should telephone the nearest consultant, whose name, address and telephone number may be obtained from the nearest Red Cross regional blood center. If it is agreed that the condition of the patient will benefit from treatment with VIG, the consultant will authorize its shipment from the nearest regional blood center. Fifteen of the 54 Red Cross regional blood centers, chosen because of their geographical locations, have been stocked with VIG. These regional blood centers have 24-hour coverages and are equipped to arrange immediate transportation to the attending physician by the most rapid means available.

In recent years, the Red Cross has assisted Dr. C. Henry Kempe, professor of pediatrics at the University of Colorado Medical Center, in carrying out a large-scale clinical research program. His studies and those of other investigators show that VIG is *not* indicated in (1) cases which are not vaccinia, such as chickenpox, herpes zoster (shingles), etc.; (2) normal vaccinations which are disturbing to the patient because of the febrile reaction, pain and swelling that are to be expected with normal primary "takes"; and (3) trivial secondary inoculations on non-vital areas of the body.

VIG is effective in preventing the disease or diminishing the severity of smallpox in individuals who have had close contact with a case of smallpox. It is also highly effective in the treatment of the rare complications from vaccination, the most frequent of which is accidental inoculation into the eye, resulting from a child's touching the vaccination and then putting his finger to his eye. Early treatment with VIG will result in a marked improvement within hours, and will prevent possible loss of vision in such cases. Special care should be taken in vaccinating children if they have brothers or sisters with eczema, because of the likelihood that they may develop vaccinia lesions on their affected skin areas, "eczema vaccinatum." Before VIG was available, this condition carried a high mortality rate in very young children, but now adequate treatment arrests the progression of this disease. Very rare individuals lack the normal body's defenses against infection, and may develop such serious conditions as generalized vaccinia or vaccinia necrosum. VIG is the only specific treatment for these conditions.

A report form will accompany each shipment of VIG, and the physician is requested to complete and return it to the research director, Blood Program, National Red Cross Headquarters, Washington 6, D. C.

The consultant located nearest to Iowa physicians is Irving Schulman, M.D., director of hematology, Children's Memorial Hospital, 707 Fullerton Avenue, Chicago 14. Telephone: DIversey 8-4040. His alternate is David Hsia, M.D., at the same address and telephone number.

IOWA MORTALITY IN 1959

Over half of the deaths in Iowa are now caused by cardiovascular-renal disease, of which diseases of the heart are the major component.

In general, our vital statistics do not indicate that 1959 was an exceptional year for Iowa. No major changes are evident, and expected trends have continued, with the minor variances we must expect in annual data of this nature. Where certain exceptions to apparent progress are evident, such as in the infant death rate, our record doesn't differ appreciably from that of the nation as a whole. Furthermore, it is still uncertain that such experience is, in fact, true regression.

The crude death rate for Iowa has been fluctuating around 10.0 deaths per thousand population since the war years, with the exception of three years centering on 1955 when the average rate was about 9.8. The increase in death rate to be expected as a result of the fact that our population is aging became evident in 1957 and has continued. However, the effect of the epidemics of upper-respiratory conditions has not been extracted from these rates.

The accompanying table, with certain exceptions, suggests that the individual mortality factors operating in Iowa are quite similar to those for the United States as a whole. Approximately 55 per cent of all deaths both in the United States and in Iowa result from the great chronic conditions, heart disease and cancer. However, the 10 per cent excess in crude death rate for Iowa relative to that for the United States might suggest that the actuarial experience varied with the age of the population at risk. The greater mortality losses experienced in Iowa are predominantly from the chronic conditions which are more readily observed among the older age groups. Even accidents, which are an important cause of death among persons 65 years of age and older, reflect our older-than-average population, as compared with that of the nation as a whole.

It is well known that Iowa ranks first or second among the states as to the share of its population 65 years of age and older. This aging of our population is not a recent phenomenon, but began years ago. In 1900, the share of Iowa's population aged 65 years or more was only 4.7 per cent. In 1910, it was 5.6 per cent; in 1920, 6.0 per cent; in 1930, 7.5 per cent; in 1940, 9.0 per cent; in 1950, 10.4 per cent; and in 1957, an estimated 11.2 per cent. But such a trend is not unique with Iowa, for the same tendency is evident for the nation as a whole. It has been the result of general social progress and is seen even where heavy influxes of young people reduce the sensitivity of our crude rates for vital statistics. Advances in the practice of medicine and surgery, the continued rise in the general standard of living, some radical innovations stemming from basic scientific discoveries, the early treatment and hospitalization that have been encouraged by insurance protection—all of these have resulted in the increased number of survivors in the older age groups. However, our crude rates cannot show continued reductions in mortality under present conditions and usage.

Another indication of our aging population, and society's effect in prolonging life, can be seen in the changing relative contribution of those aged 65 years or more to the general mortality picture for Iowa. In 1930, this group composed 48.0 per cent of all those who died; in 1940, 58.7 per cent; in 1950, 64.6 per cent; and in 1959, 68.7 per cent. Inversely, those under 45 years of age made up smaller and smaller shares of those who died. The percentages are as follows: for 1930, 29.1 per cent; for 1940, 18.9 per cent; for 1950, 14.2 per cent; and for 1959, 11.6 per cent.

DEATH RATES FOR TEN MAJOR CAUSES OF DEATH, 1959

Causes	Rates per 100,000 Population U. S.*	Rates per 100,000 Population Iowa	Per Cent of Total Deaths U. S.*	Per Cent of Total Deaths Iowa
Heart disease	366.3	402.0	38.9	38.8
Malignant neoplasms	147.1	165.2	15.6	15.9
Vascular lesion of C.N.S.	108.3	148.3	11.5	14.3
Accidents	50.7	56.4	5.4	5.4
Certain diseases of early infancy	38.5	32.2	4.1	3.1
Influenza and pneumonia (except pneumonia of newborn)	32.5	33.7	3.5	3.3
General arteriosclerosis	19.7	30.8	2.1	3.0
Diabetes mellitus	16.0	16.9	1.7	1.6
Congenital malformations	12.3	11.5	1.3	1.1
Cirrhosis of liver	11.0	6.3	1.2	0.6
All other causes	139.3	133.3	14.8	12.9
All causes	947.7	1,037.1	100.0	100.0

* Estimates based on a 10 per cent sample. National Office of Vital Statistics: Vital Statistics Report, Vol. 8, No. 13, p. 10.

ARMY HAS NEW PORTABLE X-RAY

Development of a compact diagnostic x-ray unit that weighs just 85 lbs. and can be carried in a medium-size suitcase was announced recently by the U. S. Army Medical Service. In disasters or in wartime, it is expected to be useful in diagnosing fractures, locating metallic or other foreign bodies in wounds, and in examining certain internal organs. One of its important features is that it will not blur during chest radiography while the patient is breathing normally—a valuable advantage if the patient is dazed or unconscious. Also, a prototype of the machine operates on rechargeable batteries.

MORBIDITY REPORT FOR MONTH OF NOVEMBER 1960

Diseases	Nov. 1960	Oct. 1960	Nov. 1959	Most Cases Reported From These Counties
Diphtheria	1	0	0	Woodbury
Scarlet fever	150	150	140	Jefferson, Johnson, Polk, Woodbury
Typhoid fever	2	3	1	Clinton, Keokuk
Smallpox	0	0	0	
Measles	117	55	37	Dubuque, Linn
Whooping cough	8	22	43	Polk
Brucellosis	13	26	9	Dubuque, Polk
Chickenpox	427	163	323	Cass, Des Moines, Dubuque, Linn, Polk
Meningococcic meningitis	0	1	2	
Mumps	301	196	93	Buena Vista, Des Moines, Dubuque, Linn
Poliomyelitis	1	0	8	Clinton
Infectious hepatitis	26	38	14	Guthrie, Polk, Pottawattamie
Rabies in animals	12	26	12	Humboldt, Story
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	28	62	30	For the state
Syphilis	69	146	102	For the state
Gonorrhea	94	192	72	For the state
Histoplasmosis	0	1	0	
Food intoxication	0	22	0	
Meningitis (type unspecified)	1	1	1	Pottawattamie
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	3	2	
Salmonellosis	5	2	0	Chickasaw, Johnson, Linn, Sac, Wapello
Tetanus	0	0	0	
Chancroid	1	0	0	Cerro Gordo
Encephalitis (type unspecified)	0	3	0	
H. influenzal meningitis	1	0	0	Polk
Amebiasis	0	1	1	
Shigellosis	1	8	0	Polk
Influenza	59	211	2	Dickinson, Polk

SUI FINDS WAY OF PRESERVING MORPHINE

Pharmacy researchers at SUI got an unexpected bonus when they set out to find a way to keep morphine from deteriorating during storage. Before they were done with their experiments, they not only had discovered a way to make morphine more stable but also had discovered a new compound.

Shu Yuan Yeh, Ph.D., did the work in morphine stability for his doctoral dissertation, working under the direction of John Lach, Ph.D., an associate professor of pharmacy. Yeh received his degree in June, 1959, and is now working as a research associate at SUI Hospitals.

The deterioration of morphine and other drugs is of concern especially to the federal government, Dr. Lach points out. Millions of dollars worth of drugs are being stockpiled at spots throughout the country for use in case of a national disaster. "If a way could be found to make these drugs last four years, for example, instead of two years, it would mean a huge saving to the government," he says.

In tackling the problem, the researchers first studied how the compound breaks down. Then, of the many agents used to retard the deterioration of morphine, sodium bisulfite was found most effective. It was also found, however, that the sodium bisulfite interacted with morphine, and when enough of it was added, a new compound was formed—a sodium bisulfite morphine addition compound. Tests are now underway to determine its physiologic properties and its possible pharmacologic uses. SUI has applied for a patent on it. It is hoped that the new compound will be much more stable than morphine, but its other properties will not be known until the tests have been completed.

Another side benefit from this research is an improved method for separating morphine from opium. Furthermore, by the new means it will be easier and quicker to determine the morphine content, and thus the proper price, of opium bought by the government.

THE PHYSICIAN'S PUBLIC IMAGE AND HIS SOCIAL RESPONSIBILITY IN 1985

C. KNIGHT ALDRICH, M.D.

Not too many years ago the public pictured the physician watching through the night in a family home at the bedside of a sick child. Without antibiotics and other modern advances, he was often perplexed about both diagnosis and teratment, but he was unquestionably the *physician-humanitarian*—there to give what he could of himself to all members of the family for as long as he was needed. Gradually, as medicine became more scientific and as the locus of care for the seriously ill shifted from home to hospital, the public image of the physician has changed. Currently he is pictured either in the laboratory or behind the surgical mask: more specialized, more efficient, more effective, more remote—the *physician-scientist.*

If we accept the dubious proposition that progress inevitably heads in a single direction, we must assume that the time curve of the physician-image will follow a straight line, and in his future public image he will be even more specialized, efficient, effective and remote—the *ghost physician.* The ghost physician presumably would spend his day in his laboratory-viewing room, receiving reports by tape or by closed circuit television from

Dr. Aldrich is chairman of the Department of Psychiatry at the University of Chicago. His article was written for and published in the 25th Anniversary Number of the Abbott Laboratories publication WHAT'S NEW, December, 1960.

technicians who would make the actual contact with the patients. For each case he would supervise the programming of data, check it as it is fed into the computer, interpret the results, dictate the diagnosis, and prescribe the treatment plan. The treatment plan would be relayed to the patient by teletype; therapeutic maneuvers requiring human intervention would be carried out by the technicians, or done by a super-technician, the ghost surgeon.

UNDERSTUDIES FOR GHOSTS

But what would a ghost physician prescribe when his Univac reported "No organic disease"? Where would he turn when confronted with a patient whose interpersonal disturbances required for their appropriate treatment an empathic relationship with someone professionally trained to understand them? With no sign that there ever will be enough psychiatrists to relieve him of more than a small fraction of these patients, the consistently ghostly physician either might compromise with the basic problem by using such stopgaps as tranquilizing drugs or electric shock, or he might avoid the problem altogether by delegating his responsibility to a nonmedical substitute. Under these conditions the substitute would replace the presumably archaic physician-humanitarian and would provide the patient with a new parental figure who would give of himself in personal help. The clergyman, the social worker, the psychologist-counselor already are standing in the wings waiting for their cue.

Many physicians, however, are not content to become ghosts, and are dedicated to reversing the tendency to move farther and farther away from their patients. They are convinced that the time curve of the physician-image may be a parabola rather than a straight line. For example, although today's pediatricians have learned to prevent or to manage the majority of children's organic diseases with skill and expedition, they have not retreated further into their laboratories. Instead they devote increasing amounts of their time to the emotional problems of children and mothers. Using new, more scientific approaches to personality, they are combining the roles of scientist and humanitarian, less perplexed than the physicians of the past, more willing than the average physician of the present to give of themselves as allies in their patients' struggles against anxiety.

Further evidence of medicine's reluctance to part with its patients is seen in current efforts of medical educators to integrate the scientific and humanitarian images of the physician. In their research and teaching programs, medical schools are fostering this integration through a double emphasis both on the traditional basic laboratory sciences and their clinical application, and on the scientific understanding and practical application of the social, cultural and emotional factors related to illness. Curriculum trends point to the revival rather than to the abandonment of the humanitarian tradition, with no sacrifice of science, but with an increase in the physician's concern for the welfare of his patient. At least in the medical school curriculum, the ghost physician is losing out to the *scientific physician-humanitarian.*

As the scientific study of personality extends beyond the individual to include the family and larger social units, the physician of the future will take on increased social responsibility for groups. Psychiatry exemplifies this trend: not too many years ago its area of social responsibility was virtually limited to the state hospital setting; now, psychiatrists accept social responsibility in their relationships with adoption, child placement and other social agencies; with schools, colleges and churches; with industry, courts and military services; and with programs for the aged.

ENTER THE SOCIAL DUTIES

Medicine in general, stimulated by alarm as its control over its economic fate diminishes, is taking on more responsibility within social institutions. With the increasing role of the third party in medical payments, and as specialization and group practice have increased, the individual physician no longer is the absolute monarch of all of his patient's medical problems. He already has learned to share some of his medical responsibility with his colleagues, and he now is learning to share some economic and social responsibilities as well as to communicate more freely with the administrator, the business manager, the insurance man, the social worker and others. His jealously guarded privilege of dispensing charitable services on his own terms is slipping away from him, as the time approaches when society no longer will permit citizens to rely on charity. As the economic distinctions among patients diminish, all physicians are replacing their individual responsibilities for the indigent patients with group responsibilities for the health of the public. The status of the employed physician is rising, and as his status in industry, in government, and in social and educational institutions rises, his influence on them and his social responsibility for them will increase.

In many ways medicine's emergent social responsibilities require major reorientations of the physician's system of values. Value system reorientation is difficult in any case, however, and physicians are notoriously conservative. Their resistance to change already has been expressed in terms that have resulted, temporarily, we hope, in public apprehension that the physician may be more interested in his income than in his patients. By 1985, however, his position in the economic structure of America should be so well stabilized in one way or another that he can be free to strengthen his public image as a scientific physician-humanitarian, and to expand his contributions within his enlarging social responsibilities.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

"Our customs have perished for want of men to stand by them," Cicero declared as he watched the crumbling of the Roman Empire.

Nearly 2,000 years later, Marshal Petain said of France's collapse, "Our spirit of enjoyment was stronger than our spirit of sacrifice. We wanted to *have* more than we wanted to *give*."

Elder statesman Bernard Baruch has said, "Everybody today is asking for more of everything. We should think of giving more and doing more. Then everybody will have more. If we go on in this race of selfishness, we all will have much less."

The joy of living to witness a New Year unfold usually impels us to do some soul-searching. This tendency becomes evident to our friends when we make new resolutions. What would happen in our organization, in our homes, in our communities and in our country if all of us believed and acted upon the following principle: "All that we send into the lives of others comes back into our own"? If we really believed this, we would practice it. If we practiced it, surprising things might happen!

Let's each of us beware lest selfishness rot the pillars of our society! Let's learn the lessons taught by history. Let's not be stupid children, unwilling to learn except by actual experience!

Mrs. R. F. Nielsen
President

PUBLIC AFFAIRS

Mrs. B. F. Kilgore and Mrs. D. C. Wirtz represented the Auxiliary at a meeting of the Iowa Council for Better Education, on December 13. The education bills to be presented at the 59th General Assembly of Iowa were discussed by the president of the Iowa State Education Association, by the assistant superintendent of administration of the State Department of Public Instruction, and by a representative of the Iowa Congress of Parents and Teachers. In talking of the school situation, each speaker pointed out the need for increasing state financial aid so as to relieve local districts of a greater share of school costs.

Mr. Glenn Taylor, assistant director of public policy for the Iowa Farm Bureau Federation, presented background information and the policies of his organization relating to public education, discussing at some length the land tax credit formula.

Following luncheon, a panel composed of these four speakers answered questions posed by members of the audience. Member organizations of the Iowa Council for Better Education were then given opportunities to present the sections of their respective legislative programs that deal with public education. At that time, Mr. Carl Gertnetzky, chairman of the Finance Committee of the State Board of Regents reviewed his group's Biennial Report and Financial Requirements for 1961-1963, and the legislative committees of the County Superintendents' Association and the Iowa Association of School Boards outlined their recommendations and proposals.

COUNTY AUXILIARIES

Mahaska

With 13 members present, a farewell luncheon for Mrs. Joseph Lederman was held by the Mahaska County Medical Auxiliary at the Elmhurst Country Club, in Oskaloosa. A corsage and a past-president's pin were presented to Mrs. Lederman by Mrs. George Atkinson on behalf of the organization. The table had been decorated by Mrs. Leroy Catterson, Mrs. Robert Alberti and Mrs. Atkinson.

It was announced that the Mahaska County Nurse Association will join the Auxiliary as a co-sponsor for the Future Nurse Club of Oskaloosa.

The Auxiliary members were hostesses on Thursday, December 15, at the Christmas party for the Mahaska County Hospital, also held at the Country Club.

WA-SAMA

The new Auxiliary chapter for medical students' wives at the State University of Iowa, in Iowa City, has a Self-Help Projects Committee which is starting several major endeavors, according to the chairman, Mrs. Chuck Skaugstead. Anyone having information about apartments for rent or needing an apartment or having furniture to sell gets in touch with her. A furniture (baby equipment and other sorts of apparatus) "swap shop" is being set up for those who wish to make unneeded furniture available on a loan basis to medical wives, the only people to whom the service is provided.

The next meeting of WA-SAMA is scheduled for January 10, when an attorney, Mr. Arthur A.

Leff, will speak on the topic "The Doctor and the Law."

AMERICAN MEDICAL EDUCATION FOUNDATION

Has your AMEF check gone to your Auxiliary chairman as yet?

Remember that your annual gift allows our medical schools to enjoy continued freedom and encourages future doctors.

Last month, the Black Hawk County Medical Auxiliary presented its largest single cash contribution to AMEF. The amount, $162.67, was achieved through a silent auction, with articles ranging from home baked goods, aprons, holiday ornaments to some lovely painted landscapes by Jessie Loomis. Everyone agreed it was a tremendously successful undertaking. Why don't you try it?

Each county should have one fund-raising event for AMEF during the year. No other work done by the Auxiliary is of greater importance!

Let's preserve and enhance the heritage of American medicine by increasing our support of AMEF!

MRS. R. W. DRIVER
AMEF Chairman

SPECIAL SUBSCRIPTION RATE FOR AMA NEWS

The Board of Trustees of the AMA has approved a special price of $1.50 per year, or 50 per cent of the regular rate, for sending the AMA NEWS to the home addresses of members of the Woman's Auxiliary, and non-member wives and mothers of physicians.

The copy now being sent to the physician cannot be transferred to his wife or mother, nor can it be sent to him at his home, for it must go to his professional mailing address. Therefore, the doctor's home subscription must be ordered by the individual Auxiliary member, and paid for in advance at the special rate.

A special subscription order blank has been prepared and is available from each Auxiliary chapter.

An informed Auxiliary member is the best Auxiliary member! It is hoped that everyone will subscribe to the AMA NEWS for home delivery.

FUTURE NURSES' CLUB NEWSLETTER

The Health Careers Committee is planning a FNC NEWSLETTER to go to all clubs in January. As a FNC sponsor, will you please urge the girls to send news items on their clubs' activities and plans? Previous editions of the FNC NEWSLETTER have been successful ventures, and have been of considerable assistance to the clubs.

Plan now to have your club's activities highlighted in this publication.

HANDICAPPED CRAFT SALES

Mrs. F. D. Edington reports that a check in the amount of $1,042.59 has been turned over to the Iowa Society for Crippled Children and Adults, representing the proceeds from the sale of craftwork by handicapped persons. These articles are made under the supervision of instructors hired by the Iowa Society for Crippled Children and Adults, which in turn is supported through the sale of Easter Seals.

This sale was conducted in a booth in the Health Building at the Clay County Fair, in Spencer, financed by the Clay County Medical Society and supervised by the Clay County Auxiliary. It was a Third District project, however, for the booth was manned by Auxiliary members from the nine northwest Iowa counties that compose the district.

The amount realized from this particular sale exceeds that from any of the sales conducted by these Auxiliaries in preceding years.

ESSAY CONTEST

The Auxiliary is again cooperating in the sponsorship of the AAPS Essay Contest. Information and packaged libraries of materials on the alternative topics, "The Advantages of Private Medical Care" and "The Advantages of the American Free Enterprise System Over Communism," are available at the ISMS office in Des Moines. Prizes at the state level will be $100 for the winner of first place; $50 for second place; and $25 for third place. The three winning essays will be sent to the national contest, where the first prize will be $1,000; the second prize $500; and the third prize $250. Additional prizes in the national competition will consist of four $100 each and seven $75 each.

Discuss your county Auxiliary's sponsorship of this contest in your local schools, and write for materials. Your projects chairman is preparing a letter that will contain complete details, and it will be in your hands within a few days. The deadline for entry in the state contest is March 15, for all national entries must be submitted by April 1, 1961.

Make this your year for the essay contest!

MEETING YOUR MEMBERS

Candidate No. 6
Clarinda's Fling
Mrs. C. H. Flynn

My daughter, age twelve, saw this person's sketch and said, "Black hair and blue eyes? She must be pretty!" She is! Now we are wondering if her twenty-one year old daughter resembles her mother.

Her family is chiefly concerned about the welfare of citizens who live in or near Clarinda, Iowa. To be very explicit, there is husband and father

Charles, in general practice. Esther works with Future Nurses Clubs, her Church, P. E. O., and renders many civic services whenever she is needed. This poem should remind you of her.

Hair and Eyes
Of black and blue,
Is not much
Of a clew for you.
Always wears tints of blue
Very fond of pretty shoes.

Page County
She makes her base,
Her busy life
Is quite a race.
Likes to teach, drive a car,
Red Cross, travel, reading's par.

Here's a hint
To guess her name.
Through programs fine
She spreads her fame.
Auxiliary surely knows
She helps out wherever she goes.

CAN YOU HELP?

The September BULLETIN contains Dr. Louis Orr's speech to the Auxiliary at the American Medical Association Convention. The address was an appeal for us to come to the aid of a leprosy colony in Thailand. A detailed brochure and letter from the colony was sent to our Iowa Auxiliary in the hope that we would send "sample drugs," bandages, vitamins, eardrops, cough syrup, etc., from our home or office supplies.

Be sure to call your post office to get mailing instructions! The name of each item must be written on a declaration slip. The maximum weight limit is 22 pounds. Address all shipments to:

Leprosy Relief Fund
c/o Adam W. Aitken
P.O. Box 1283
Bangkok, Thailand

One box from each county would be a splendid response.

"YOUR WORDS CARRY WEIGHT"

The above was the title of the address of Dr. Leonard Larson, president-elect of the AMA, to the members of the 1960 Auxiliary Fall Conference.

An article ending with the words "Isn't that just like a woman?" he says, started him thinking about the Woman's Auxiliary and thus prompted him to discover that this group of women are "rather amazing persons" who certainly cannot be included in such a generality. In pursuing this thought further, he found that during 1959, for example, the Auxiliary members contributed 3,108,314 hours of volunteer and philanthropic service to their communities. (This impressive amount of time is equal to one person's working 354 years, 24 hours a day, without stopping).

Also, in just eight years, since 1952, the Auxiliary has engineered drives for, and has raised, $1,033,725 for use as loans and scholarships for careers in medicine. This means $354 daily for eight years.

In addition, they organized 1,931 Future Nurses Clubs, promoted innumerable health careers days, and participated in county fairs, science fairs, health forums and career clubs for young people.

These activities brought the question "What kind of a person is the average Woman's Medical Auxiliary member?" The only answer, of course, is she is a tireless worker when inspired by a cause. She is a planner who can look ahead to future needs. She is devoted, clever, practical and resourceful.

Dr. Larson went on to say that he could not see where any of this was "just like a woman," for not all women are either as industrious or as capable.

All these accomplishments of the group show just what can be done through organization. The medical profession looks to its Auxiliary for aid in health matters.

One area in which Dr. Larson said the Auxiliary can be of special help at this time is on a program recently launched by the AMA's new Commission on Medical Care Costs. The Commission is looking for answers to the many questions being raised about medical care costs and plans to present its findings frankly and forthrightly to the medical profession and the public.

One section of concern is the millions of dollars a year being thrown away, by the American public, on devices, so-called "cures," food fads, "health literature" and many other forms of quackery. You can get the facts on these things and then talk to people—your friends, club members, neighbors—so as ultimately to arm these consumers with the facts in the hope that they will use them to reduce their expenditures on health care dramatically without sacrificing either quality or effectiveness.

As Auxiliary members, you play an important part in American medicine. Dr. Larson emphasized the fact that there are doors open to the wives which are not open to the physicians, and that as women, "your words and actions carry a weight, an insight, and an influence all their own."

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls
President-Elect—Mrs. B. F. Kilgore, 5434 Woodland, Des Moines 12
Secretary—Mrs. L. F. Henderson, 304 Seerley Street, Cedar Falls
Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12
Editor of THE NEWS—Mrs. W. W. Sands, 1515-41st Street Place, Des Moines 11

THE DOCTOR'S BUSINESS

To Use, or Not to Use,

Accelerated Depreciation

HOWARD D. BAKER
WATERLOO

Perhaps the most discussed but least understood aspect of taxation is depreciation.

Depreciation, in general, simply permits the recovery, over a specified period of time, of the cost of assets which are used in a trade, profession or business and which have useful lives in excess of one year.

Human nature and an instinctive dislike for taxation lead many of us to take "all the law allows" in figuring each of our deductions, and completely to disregard future consequences. Moreover, there has been a great deal of discussion of the permissible methods of "fast write-off," and the mistaken idea is widespread that these methods are always advantageous. Such is not the case. Each taxpayer must analyze his individual situation and decide logically which technic to use.

In most situations where there is a steadily rising investment in depreciable assets, accelerated depreciation is advantageous. Thus, new equipment is depreciated rapidly so that money will be quickly available for the purchase of still more equipment. Accelerated depreciation is likewise preferable for the taxpayer who expects his annual income to decline during the useful life of the newly purchased asset.

The opposite is true, however, for the man whose annual investments in depreciable assets are declining. If he were to choose a fast write-off, he would reaccumulate funds more rapidly than necessary, and more importantly, he would run the danger of exhausting these ones of his deductions prior to his entry into a higher tax bracket.

Another important consideration is the relationship between the expected useful life of the asset and the taxpayer's present age. A doctor past 45 years of age who has bought a building with a life of 33 to 50 years should certainly consider accelerating the depreciation. Even by so doing, he probably will be unable to recover the full cost of the structure. If he were to sell the building, the part of his gain that might be attributed to the acceleration of depreciation would be regarded as a capital gain, and as such would be only 50 per cent taxable.

After considering your situation, if you will have steadily increasing capital investments, if your income will show a downward trend over the life of the asset, or if the asset is a building with a long life expectancy and you cannot hope to recover its full cost by means of straight-line depreciation, it will probably be to your advantage to adopt one of the fast write-off methods currently allowed. It must be remembered that depreciation is a recovery of cost, and any acceleration in early years will be offset by reduced depreciation in later years.

The following comparison demonstrates write-offs under the three methods now recognized by the Bureau of Internal Revenue.

CURRENTLY PERMISSIBLE DEPRECIATION METHODS
Asset Costing $5,000—Useful Life 5 Years

	Straight Line		Declining Balance		Sum of Digits	
Year	Annual Deduction	Amount Recovered	Annual Deduction	Amount Recovered	Annual Deduction	Amount Recovered
1	$1,000	$1,000	$2,000	$2,000	$1,667	$1,667
2	1,000	2,000	1,200	3,200	1,333	3,000
3	1,000	3,000	720	3,920	1,000	4,000
4	1,000	4,000	432	4,352	667	4,667
5	1,000	5,000	259	4,611	333	5,000

THE Journal OF THE IOWA STATE MEDICAL SOCIETY

what does high "ABA" mean to you?

High serum levels of antibacterial activity mean fewer treatment failures in severe infections or in infections only marginally sensitive to penicillin. In other words, high "ABA" means . . .

consistently dependable clinical results

Lilly
QUALITY / RESEARCH / INTEGRITY

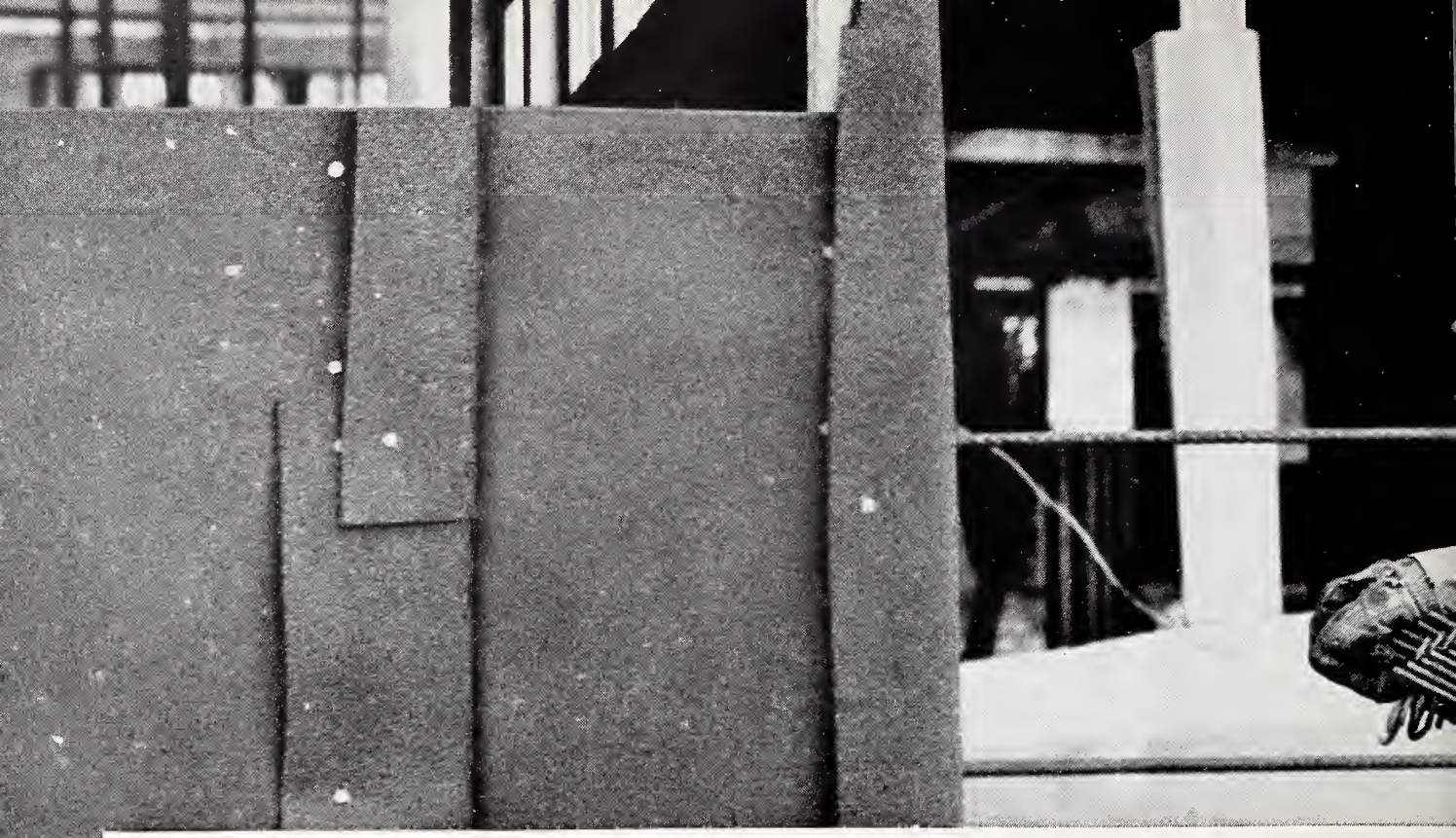
V-CILLIN K®
(penicillin V potassium, Lilly)

produces greater antibacterial activity in the serum against the common pathogens than any other available oral penicillin.

Now at lower cost to your patient

133217

FEBRUARY, 1961



Put your low-back patient back on the payroll

Soma's prompt relief of pain and stiffness can get your low-back patients back to work in days instead of weeks

Soma is unique because it combines the properties of an effective muscle relaxant and an independent analgesic in *a single drug*. Unlike most other muscle relaxants, which can only relax muscle tension, Soma attacks both phases of the pain-spasm cycle at the same time.

Thus with Soma, you can break up both pain and spasm fast, effectively . . . help give your patient the two things he wants most: relief from pain and rapid return to full activity.

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only with higher dosages. Soma is available in 350 mg. tablets. Usual dosage is 1 tablet q.i.d.

The muscle relaxant with an independent pain-relieving action

SOMA®

(carisoprodol, Wallace)

Wallace Laboratories, Cranbury, New Jersey

How you can help save your patients a month's pay

Kestler reports in J.A.M.A. (April 30, 1960) that conventionally treated low-back syndrome patients required an average of 41 days for full recovery (range: 3 to 90 days). The addition of Soma therapy in this comparative investigation reduced the average to 11.5 days (range: 2 to 21 days). With Soma, patients averaged full recovery 30 days sooner.

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The Medical Examinership as a Career

SAMUEL K. LEWIS, M.D.
ELMHURST, ILLINOIS

Dr. Lewis, the president of the National Association of Coroners, regards Iowa's new Medical Examiner Law as a long step in the right direction, but he offers a number of suggestions regarding medical investigations of unattended deaths and proposes some improvements for the newly inaugurated system.

He has a special interest in Iowa because he grew up in and around Shenandoah and began his medical education at the State University of Iowa.

When the physical life of a human being ceases, civilized people demand an explanation of the cause of death. A number of deaths—nationally estimated at between 20 and 25 per cent of the total—require thorough and complete investigation so that answers can be found for the questions "Who?, When?, Where?, What?, Why? and Whither?" These have been designated "the six W's." Heading the team that performs the requisite investigation should be a qualified member of the medical profession, but the name given to this team captain is immaterial. The important thing is *how well he does his job!* He must measure up to his important position before others measure him—for measure him they will, in every conceivable way!

This physician—whether coroner, medical examiner or whatever else he is called—must be adequately prepared professionally, ethically, physically and mentally. He must have an unwavering desire to better his fellow man. He should have practiced some branch of medicine successfully for three to five years, and he should have had some formal training in pathology, at least enough so that he knows the gross normal. He must be a keen observer. He must be able to gain the immediate confidence of all the other professional men in his domain. He and his family must resolve to be unselfish of his time and patience. He must resolve to be callous to all remarks that the press and his fellow citizens may make. To them, as well as to himself, he must be honest. His friends may brag of his accomplishments, but he must never do so. His entire staff must be likewise careful. He must never rebuff his critics by spoken word or by letter. If he continues doing his work to the best of his ability, his critics will eventually become his boosters.

The medical examiner must teach and study as never before. His must be a seven-day, 24-hour-per-day week. Death is no respecter of day or hour. He must teach all with whom he comes in contact. It is up to him to instruct the hospital resident, the fireman, the Boy Scout, the nurse and, yes, even the young mother. Incidentally, he must be sure to warn each of these people NEVER to forget FIRST to look in a child's throat. Little two-year-old Johnnie's sudden demise could have been prevented if only someone had removed a toy balloon that he sucked into his trachea.

FORENSIC ORGANIZATIONS WELCOME NEW MEMBERS

Teaching and study, of course, go hand in hand. The medical examiner will never see all of the known variations of the "Cause and Manner of Death." Even more importantly, he must keep studying the fundamentals. It is therefore imperative that the medical examiner be a working member of his local, state and national medical organizations. In addition, there are two other professional groups that he will find helpful in his particular sort of work—the American Academy of Forensic Sciences, with its many sub-sections, and the National Association of Coroners. Any qualified physician is most welcome to attend the seminars, and subsequently to become a member, of either, for both organizations are dedicated to "education for proficiency" in the investigation of undiagnosed and sudden deaths. It is also obligatory for this team leader to keep in touch with all the disciplines that are important to the proper discharge of his responsibilities. It would be absurd for me to attempt to name all of them, for the list expands with each new case.

A NEW DEPARTMENT IS NEEDED AT S.U.I.

The foregoing recommendations are particularly applicable to Iowa, where the old regime is being changed, and where a new work plan is being introduced. But something more is necessary. The new plan should include the establishment of a new department at the State University. Any name may be given to it, but what is important is that it be staffed with young, well educated, imaginative and dedicated individuals who will make it productive in the research area of legal medicine, will provide the state with a first-rate central laboratory, and will turn out well qualified graduate students, so that within five years the incumbent medical examiners will have to dig hard to hold their jobs. Such a department could

provide personnel for other states too, for well trained specialists in this field will be in great demand if these ideas catch fire.

In the new department, studies of old and new cases, domestic and foreign, should be made. A mobile unit might be set up, one which is ready at any time to proceed to a scene and cooperate with local units. Such a department should be a separate entity, and by no means should it be at the mercy or subject to the dictates of a previously existing department. It need not even be a part of the College of Medicine, and it must have liaison with all of the disciplines in the University.

This department should be the central agency to which specimens, regardless of size, can be sent for expert examination, and at which all known scientific disciplines are available. The Alaskans think nothing of flying a body from the Aleutians to Anchorage—a distance of over 1,000 miles—for complete pathologic and other studies. The corpse is then returned to its home domain for religious disposal. There already are a few excellent departments of this type at universities in the United States. One of them is at Western Reserve University, in Cleveland. A newly-established department could improve upon its predecessors, and expenditures for it shouldn't be limited to the amount of money that it is expected to save for the people of the state. Its major value will be measured in terms of the lives it will save.

SEVERAL COUNTIES CAN SHARE A MEDICAL EXAMINER

How about the numbers of the individuals who are to be known as "medical examiners"? It is my belief that one dedicated and hard working physician can handle this type of work for a population of up to 500,000, *but not more.* Most states and cities can be divided into areas containing between 300,000 and 500,000 people, and therefore there is no need for having a separate medical examiner for each county. In normal times, such an arrangement should give each examiner between 300 and 500 cases per year to investigate, and for this work load it appears that a salary of between $11,000 and $18,000 per year would be fair and adequate. This stipend would be in addition to the allowances for traveling expenses and other reimbursements that are standard for governmental agencies in the area. The examiners, under this scheme, would have no time for supplemental private practice.

The fee system of payment must be condemned. It is outmoded, unrealistic and just not a sensible mode of compensation. Further, the monies spent on this work should come out of general tax funds because the outlays are for the good of everyone, and cannot be allocated in an equitable way to individual estates.

If a jury inquest is needed—and occasionally it may be—then it should take place in formal court. The examiner and his staff should present their findings to a judge and jury, who may then arrive at the truth regarding legal matters other than the "Cause and Manner of Death," and can find answers to questions other than the "six W's" previously mentioned. The medical examiner should be prepared to defend his statements on cross-examination.

Finally, what authority should this important physician-leader have? *Authority* and *power* are nebulous terms. Certainly he should have authority to do or to order any type of examination of the scene or of the decedent that he feels would be useful in arriving at a correct diagnosis of the "Cause and Manner of Death." Yet as time goes on, he will find that the necessity for his insisting upon examinations of the decedent will be infrequent.

The examiner will accumulate good will for the future if he enlists the help of the family physician, the local police, the clergy, the funeral director and the deceased individual's friends in persuading the next-of-kin to give him written permission for a necropsy. Then too, the family may be represented during the procedure, either in person or by counsel, but if not, then the examiner must himself explain the findings to the relatives. He should also send a copy of his report to the family physician. In my own practice I have had a 40 per cent autopsy rate, but I have had to insist upon such an examination in only five of my last 2,000 cases. For the rest, I obtained permissions. Above all, there is no place in this work for a sneak play or an underhanded examination!

CONCLUSION

In summary, the dedication of the individual is all-important. The medical examiner is the family physician entering a new field. He must be sure that he constantly has every type of investigative consultant at his beck and call. I mean that he should be able to summon lay investigators of F.B.I. caliber, among others.

A central point to call for help could well be a progressive legal medicine department at the State University. Mobile units could be available there.

The examiner must have authority, but he will learn to use it only infrequently. He must be adequately compensated, but on a regular stipend and not from fees or on the basis of the inquest procedures he performs.

The types of cases to be called to his attention and the time element are proper subjects for discussion by the component county medical societies. The case load will increase with the competency of the individual, for the medical examiner's work need not be limited to questions of homicide, suicide and accident. It can cover all phases of bacterial, chemical, thermal and mechanical hazards to human life.

A young physician resolved to make this his career will find great satisfaction in knowing that he has helped a deceased person's survivors to live more happily and healthily.

Scientific Articles

Hemodynamic and Clinical Effects Of Guanethidine*

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IOWA CITY

GUANETHIDINE, [2-(octahydro-1-azocinyl)-ethyl]-guanidine sulfate, is a new hypotensive drug with a different mode of action from previous agents which lower blood pressure. It has been shown that in hypertensive animals guanethidine lowers blood pressure, augments the effect of injected norepinephrine, inhibits the effect of ephedrine and various reflex pressor responses, and does not reduce the magnitude of postganglionic action potentials in the cervical sympathetic ganglia.[1-6] These actions, plus the hypertension seen immediately after intravenous injection of guanethidine, suggest that the drug may displace norepinephrine from its storage site at sympathetic nerve terminals and prevent its subsequent reformation. There is evidence that the drug does not primarily block autonomic ganglia.[1-6]

We wished to observe the effect of guanethidine on various hemodynamic responses in man, since previous observations on these responses had been made in laboratory animals. We also used guanethidine for its hypotensive effects on a group of 1 normotensive and 23 hypertensive patients in order to evaluate its clinical effectiveness.

MATERIALS AND METHODS

All patients studied were from the wards of the University Hospitals and Veterans Administration Hospital, Iowa City. Each was evaluated and classified according to a hypertensive index previously described.[7] In this grading system, we assigned values of 0 to IV for each of six functions: hypertensive retinal and arteriolosclerotic retinal changes; cardiac, kidney, and brain function; and control blood pressures. Patients were said to have hypertensive disease of Grade IV severity if their index was over 18 units and if the hypertensive retinal changes and blood pressure elevation were of Grade IV severity.

Except for one normotensive woman, patients for hemodynamic testing were selected from this group. Studies were made in the morning after breakfast. Brachial intra-arterial pressures were recorded in all but one instance (femoral intra-arterial pressures substituted), using Sanborn recording equipment. Tilting maneuvers were done on a Picker electrically driven tilt table. All infusions were given intravenously by a Harvard Apparatus infusion pump to insure proper infusion speeds. The Valsalva experiments were done by having the patient expire against a 30- to 40-mm. Hg pressure for 15 to 20 seconds (always the same conditions for any series of observations). The hypertensive after-response was graded 0 (none) to IV (increase of blood pressure to >35 per cent over control), according to the method of Wilkins, Culbertson, and Smithwick.[8]

A synopsis of our clinical observations on the 24 patients given guanethidine is shown in Table 1. Blood pressures shown were taken in the standard manner 4 times a day in the hospital and at home in all cases except patients No. 22 and No.

* The work was supported in part by U. S. Public Health Service Research Grant H-3270, and this report was presented at a Symposium on Guanethidine at the University of Tennessee College of Medicine, in Memphis, on April 22, 1960.

The authors are staff members of the Cardiovascular Research Laboratories, Department of Internal Medicine, State University of Iowa College of Medicine, and the Medical Service, Veterans Administration Hospital, Iowa City, Iowa.

TABLE I
SUMMARY: PATIENTS TREATED WITH GUANETHIDINE

No.	Pt.	Sex	Age	Ht. Diagnosis	Ht. Grade	BUN (mg. %) Before	BUN (mg. %) During	B.P. Before G (av. mm. Hg) Supine	B.P. Before G (av. mm. Hg) Standing	B.P. During G (av. mm. Hg) Supine	B.P. During G (av. mm. Hg) Standing	Days on G	Daily Dose (ave. mg.)	Ht. Drugs Immediately Prior to G	Concurrent Ht. Drugs	Side Effects	Other Diseases	Clinical Impression	Remarks	No.
1	E.G.	M	65	EH—PM	III	25	25	180/120	168/112	206/121	129/88	66	18.75	D, T	None	Ortho., moderate; Diar., transient	Old CVA, slight residual; Congestive failure	D	See Table 5	1
2	G.M.	M	63	EH	III	20	45	160/130	140/112	165/119	134/103	36	25	C, T	None	Ortho., minimal; Diar., transient	None	D	See Table 5	2
3	H.L.	M	50	Chronic nephritis	IV	50	60	200/120	160/100	233/116	148/80	164	37.5	A, C, E	C	Ortho., less marked; Diar., presistent	Chronic nephritis	D	See Table 5	3
4	C.P.	M	66	EH	II	20	20	160/100			151/97	184	87.5	None	None	None	Asthma	0	None	4
5	R.Go.	M	63	EH	III	45	60	164/110		188/119	131/96	126	25	H, M	None	Ortho., moderate	Angina	D	See Table 5	5
6	G.H.	M	63	EH	III	10	10	196/120		157/78		203	50	None	None	Ortho., mild	Peripheral neuropathy	+	Weakness	6
7	C.L.	M	44	EH—PM	IV	22	24	224/170		205/142		110	50	C, R	None	Diar., moderate, persistent	CVD, repeated thromboses; Bedfast	D	See Table 5	7
8	C.S.	M	52	EH—PM	IV	27.5	22.5	220/160	180/130	215/129	180/104	176	80	C, I	H	Ortho., less marked; Diar., mild	None; previously had 2 episodes of Ht. encephalopathy; Heart failure	++	None	8
9	M.S.	M	39	EH	III	20	20	191/131	196/136	193/122	143/102	163	87.5	A, C	C	Ortho., less marked; Slightly loose stools	Asthma	++	None	9
10	B.S.	M	24	EH	I	15	15		150/108		129/100	122	50	None	None	None	None	+	None	10
11	E.B.	M	51	Chronic nephritis	II	47	67	184/117		174/106	183/103	93	37.5	None	None	None	Chronic pyelonephritis with azotemia	0	None	11
12	F.M.	M	35	EH—PM; pyelonephritis	III	67.5	62	247/141	174/107	187/107	158/100	86	60	C, P	H	Ortho., minimal	Acute and chronic pyelonephritis with anemia and uremia	+	Moderate azotemia with BUN 65; Severe pyelonephritis prior to treatment	12
13	M.A.	M	61	MH	IV	See Fig. 5		212/138	203/117	155/103	124/85	77	33	None	C, H	Ortho., minimal	Hemolytic anemia, cause?	+	Ortho., especially after removal of C	13
14	J.A.	M	23	EH	III	27	32	192/139	130/97	177/124	124/89	42	102	B, C, H, R	C, H	Ortho., severe; Fatigue	None	+	Ortho., less with G than with B	14
15	F.C.	M	27	EH	I	..	..	141/93	123/95	131/77	113/72	17	87.5	None	None	Nausea	None	0	None	15
16	S.F.	F	23	Chronic nephritis	III	15	19	159/111	128/104	145/109	92/64	4	18.75	C, H, R	C, H, R	Ortho., severe; Persistent blurring of vision	Chronic glomerulonephritis	..	Stopped because of severe ortho. and blurring	16
17	R.Gr.	M	46	EH	IV	43	65	202/138	165/115	180/129	150/111	127	74.5	C, I, R	C, D, H	Orthostatic hypotension with right hemiparesis	None	D	See Table 5	17
18	R.H.	M	59	RH	II	28	25	172/101		144/83	110/69	42	34	None	None	Ortho., occasional	Nonfunctioning left kidney	+	Stopped because unable to follow closely	18
19	D.J.	M	45	RH	III	20	29	189/129		145/91	140/87	199	58.5	C, H	C, H	Ortho., moderate; Acute attack of gout	Polycystic kidneys; Gout; Old CVA	+	None	19
20	V.K.	F	44	EH	III	19	26	191/113	158/93	187/109	152/90	47	54.5	C, H, T	C, H	Ortho., slight; Diar., moderate	None	D	See Table 5	20
21	L.T.	M	34	Kimmelstiel-Wilson	II	26	110	168/107	188/113	152/101	121/82	15	47.5	C, H	None	Ortho., moderate; Diar., mild	Diabetes; Kimmelstiel-Wilson syndrome	..	Stopped because of rising BUN	21
22	J.V.	M	41	Anxiety	O	..	13	130/80	130/85	124/78	112/76	84	21	M	M	None	Anxiety state	0	None	22
23	K.W.	F	53	MH	IV	52	60	234/113	220/112	179/94	159/80	182	58	C, H, R	C, H	Marked bradycardia; Fatigue	Cholecystitis	+	None	23
24	F.Z.	M	52	EH	II	6	13	165/115	153/110	154/101	133/95	52	83	None	None	Loose stools, 3 days	None	+	None	24

KEY TO ABBREVIATIONS USED

HEADINGS: No. = number; Pt. = patient; Ht. = hypertensive; BUN = blood urea nitrogen; mg. = milligram; B.P. = blood pressure; G = guanethidine; mm. = millimeters.

HT. DIAGNOSIS: EH = essential hypertension; MH = malignant hypertension; RH = renal hypertension; PM = postmalignant phase.

DRUGS: A = hypotensive (experimental ganglion blocking drug); B = bretylium; C = chlorothiazide; D = dihydrochlorothiazide; E = chlorisondamine; G = guanethidine; H = hydralazine; I = mecamylamine; M = meprobamate; P = pentolinium; R = reserpine; T = trimethidinium.

SIDE EFFECTS: Ortho. = orthostatic symptoms; Diar. = diarrhea.

OTHER DISEASES: CVA = cerebrovascular accident; CVD = cerebrovascular disease.

CLINICAL IMPRESSION: + = improved; ++ = greatly improved; 0 = no change; .. = worse; D = dead.

24, who had only initial hospital and frequent clinic determinations made. Control blood pressures refer to averages of the month prior to therapy or, if the patient was new or if his drugs were being altered, a 3- to 5-day average just prior to therapy with guanethidine. Pressures during therapy represent averages of all pressures available during this time.

RESULTS

Laboratory Studies. Figure 1 shows the blood pressure response to tilting from the supine to the upright position, Fig. 2 from the upright to the supine position before and after guanethidine. Similar results were obtained in 4 other patients so tested. Because of the nature of the experiment, the gauge level of the recording equipment was not changed until later in the tracing, but in no case was there an important difference in mean blood pressure levels after that adjustment was made, nor was there a hypertensive overshoot with position change after guanethidine. It can be seen that the pattern of blood pressure recovery on assuming the supine position after guanethidine differs from the control. The pulse pressure continues to be narrow for several minutes, and the blood pressure rises more slowly after the drug.

Figures 3 and 4 show the difference in the Valsalva test in the supine and upright positions before and after guanethidine and are representative of the responses of 3 patients. The initial rise in pressure with breath-holding was usually less after the drug. In the upright position, especially, the pressure fell rapidly during the maneuver, and the post-breath-holding drop was less marked. When the hypertensive overshoot was present initially, it was abolished, the overshoot grades changing from IV to 0, II to 0 and 0 to 0 in the 3 patients. In general, there was slowing of the pulse rate after guanethidine, more marked in the supine position.

Table 2 shows the response of a patient to 2 dosage levels of norepinephrine before and after guanethidine. As in 2 other patients, there was an increase in mean blood pressure after guanethidine, measured as a percentage of control blood

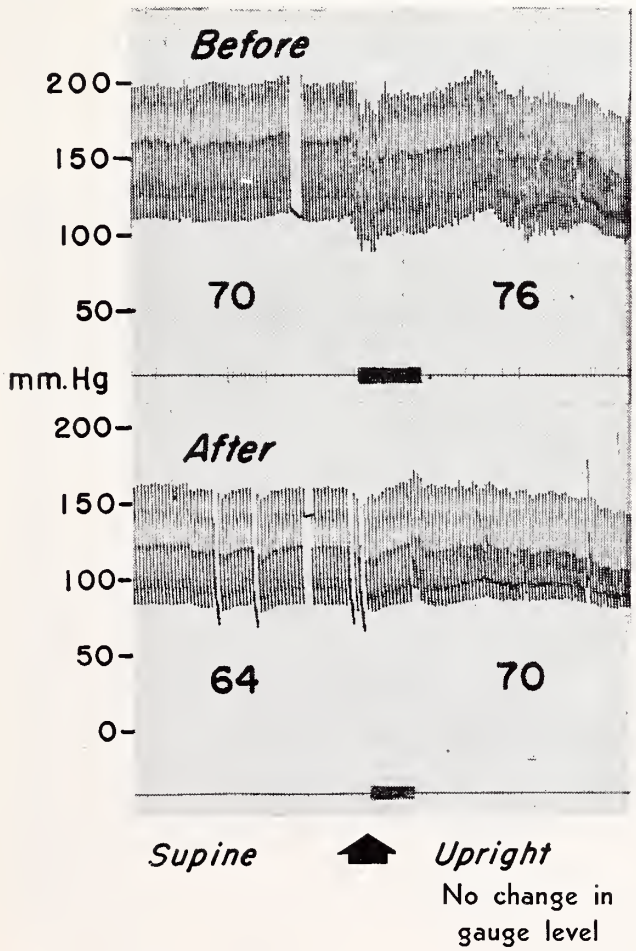

Figure 1. Blood pressure and pulse rate response to tilting from horizontal to vertical position at point of arrow, before and after guanethidine. In this figure, time scale is 1 mm. = 2 sec.; in subsequent figures, time scale is 1 mm. = 1 sec.

TABLE 2

RESPONSE OF BLOOD PRESSURE AND PULSE RATE OF ONE PATIENT TO NOREPINEPHRINE INFUSION BEFORE AND AFTER GUANETHIDINE

Dose		Mean Blood Pressure (mm. Hg)		Pulse Rate (beats/min.)		Duration (min.)
		Control	Change	Control	Change	
35 mcg.						
	Before	118	+ 2	84	0	3
	After	93	+22	60	− 8	5
70 mcg.						
	Before	118	+47	78	−10	4
	After	90	+85	64	0	10

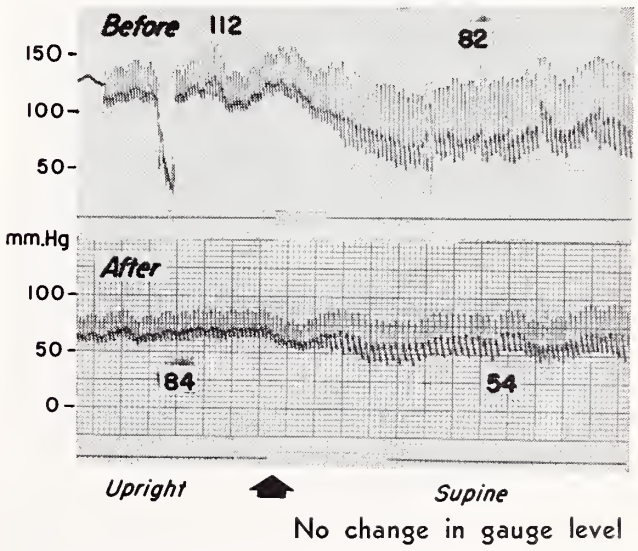

Figure 2. Blood pressure and pulse rate response to tilting from vertical to horizontal position before and after guanethidine.

pressure. With the 70-mcg. infusion, the blood pressure rose to a value greater than that in the period before guanethidine. The pulse rate was slower in all but one instance after guanethidine (shown), and there was usually a greater absolute fall in pulse rate.

We observed no significant increase in blood pressure in 2 patients given ephedrine. As is shown in Table 3, ephedrine on two occasions did not raise the blood pressure over control. In the third study, the patient was receiving 125 mg. of guanethidine daily (75 mg. at the time of the second study), and there was little or no rise in mean pressure. Although suboptimal doses of ephedrine were used for blood pressure rises in this and one other patient on guanethidine, no increased sensitivity to this substance was observed in these preliminary studies. This is in contrast to what was noted in 3 patients after treatment with bretylium tosylate, where there had been a sharp increase in blood pressure response to injection of a small quantity of ephedrine (see response of 1 patient in Table 4).

TABLE 3

RESPONSE OF BLOOD PRESSURE AND PULSE RATE OF ONE PATIENT TO EPHEDRINE INFUSION BEFORE AND AFTER GUANETHIDINE

(Patient F. C.) Dose		Mean Blood Pressure (mm. Hg)		Pulse Rate (beats/min.)		Duration (min.)
		Control	Change	Control	Change	
7.64 mg.	Before	93	+7	68	+ 4	12
	After	88	+7	55	+10	11
	After	97	+3	40	+ 8	10

TABLE 4

RESPONSE OF BLOOD PRESSURE AND PULSE RATE OF ONE PATIENT TO EPHEDRINE INFUSION BEFORE AND AFTER BRETYLIUM

Dose		Mean Blood Pressure (mm. Hg)		Pulse Rate (beats/min.)		Duration (min.)
		Control	Change	Control	Change	
11.6 mg.	Before	95	+ 8	64	− 2	24
	After	100	+25	56	−12	30

Clinical Observations. Most of our observations were made on patients severely ill with hypertension, the majority of whom had been refractory to other therapy for blood pressure reduction (Table 1). It is not surprising, therefore, that 7 of the 24 patients given guanethidine died during the study (Table 5). Four of these severely ill

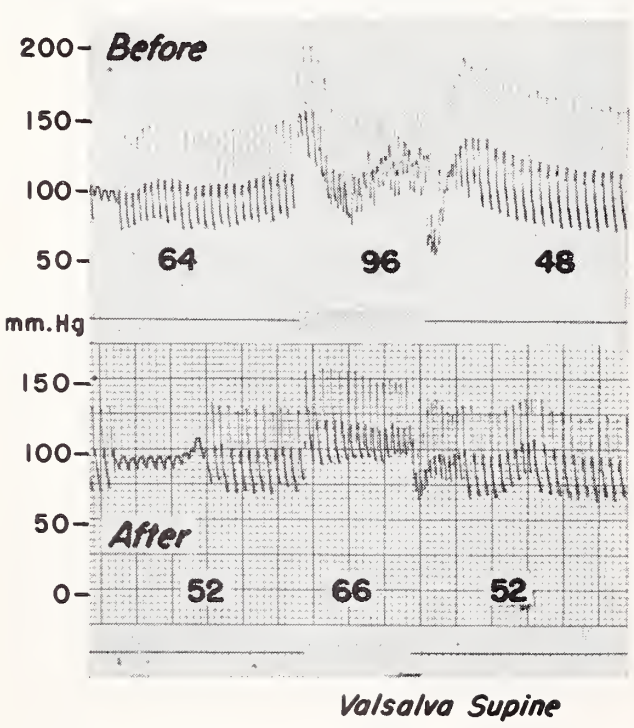

Figure 3. Blood pressure and pulse rate response to the Valsalva maneuver, in supine position, before and after guanethidine. In this figure and Figure 4, the marker indicates period of expiratory effort against a pressure of 40 mm. Hg. After the drug, there was a less marked rise of blood pressure at start of breath-holding, relatively less drop during it, and abolition of the hypertensive overshoot afterward.

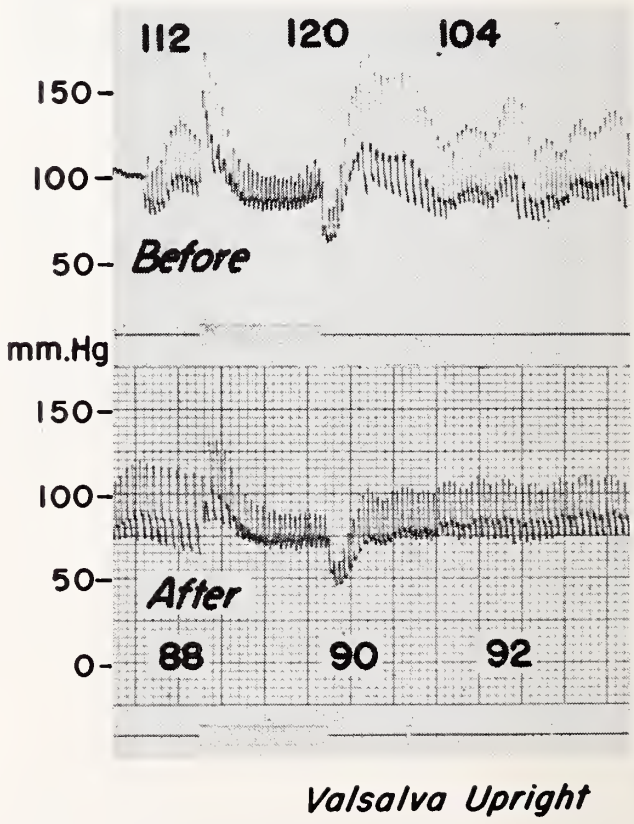

Figure 4. Valsalva response while standing, before and after guanethidine. Those differences noted in the supine test are seen here, except that blood pressure fell to a relatively lower level during breath-holding.

TABLE 5
GUANETHIDINE STUDY
Deaths

Patient	Sex	Age	Days on Drug	Average Dose (mg. daily)	Other Drugs	Post-mortem	Cause of Death	Time off Drug Before Death (days)	Unusual Postmortem Findings
E. G.	M	65	66	19	0	0	Cerebrovascular accident 5 days before myocardial infarction and death	5	Not done
G. M.	M	63	36	25	0	+	Converted to RSR with quinidine, then died. ? arrhythmia	0	0
H. L.	M	50	164	38	Chlorothiazide, 1 Gm./day	+	Uremia	10	Chronic nephritis and ileal carcinoid without metastases
R. Go.	M	63	126	25	0	0	Uremia and myocardial infarction	35	Not done
C. L.	M	44	110	50	0	+	Cerebral thrombosis—multiple	0	0
V. K.	F	44	47	55	Chlorothiazide, 1 Gm./day Hydralazine, 200 mg./day	+	Cerebral hemorrhage	0	Chronic pericarditis, mild
R. Gr.	M	46	127	75	Dihydrochlorothiazide, 100 mg./day Hydralazine, 400 mg./day	+	Uremia	10	0

patients had cerebrovascular accidents while taking guanethidine, 3 of the thrombotic variety, 1 (No. 20) a massive cerebral hemorrhage. One thrombotic episode was associated with a bout of hypotension, the patient (No. 17) developing a stroke involving an area of his brain where ischemic signs previously had been present. The other occlusions (in patients No. 1 and No. 7) occurred when there was no excessive blood pressure fall.

Patient No. 2 died shortly after his cardiac rhythm was converted to regular sinus from atrial fibrillation, with the clinical impression of death due to ventricular fibrillation. Postmortem examination indirectly supported this diagnosis, since no acute process was found to account for the patient's course.

Except for mild chronic pericarditis in one patient (No. 20), there were no unusual portmortem findings. All had severe vascular disease with nephrosclerosis (3 died in uremia). Special attention was directed to the liver, bone marrow, gastrointestinal tract, and kidneys in these examinations.

Of 24 patients treated with guanethidine, 12 are on the drug currently (Table 6). In addition to those who died, 5 were taken off the drug; one (No. 15) was given the drug only for hemodynamic studies; one (No. 21) had rising blood urea nitrogen levels; one (No. 16) noted severe orthostatic hypotension and blurring of vision; one (No. 11) had no clinical improvement to warrant continuation; and one (No. 18) was of limited intelligence and could not be followed closely.

TABLE 6
PATIENTS TREATED WITH GUANETHIDINE

Hypertensive Grade	Total	Dead	Days on Therapy (average)	On Guanethidine Now
0	1		84	1
I	2		70	1
II	5		77	2
III	10	4	105	5
IV	6	3	130	3
Total	24	7		12

Of the 17 living patients, 11 showed clinical improvement on the basis of reduction of blood pressure, absence of undesirable side effects, and regression of signs of severe hypertensive disease. Four, one of whom (No. 22) was given the drug for treatment of anxiety, demonstrated improvement difficult to document, or no improvement, while 2 were definitely worse symptomatically or objectively while on guanethidine.

Side and Toxic Effects. Nine of our 24 patients

had loose stools or frank diarrhea within 2 weeks after starting guanethidine. In only 5 was the diarrhea severe enough to warrant use of parasympatholytic drugs (methscopolamine and atropine), which were effective in stopping the hyperperistalsis resulting from unopposed parasympathetic action on gastrointestinal motility. We also found that paregoric would stop the diarrhea. In no patient was this complaint a serious problem, and it seemed to abate to some extent in all of them after the first month of treatment.

As shown by Richardson, Wyso, Magee, and Cavell,[9] guanethidine lowers glomerular filtration rate when blood pressure falls. This fall in filtration rate was reflected in 14 of our patients by a rise in the blood urea nitrogen (BUN). In most, the rise was very mild and transient, although patients with initial mild azotemia showed a continually rising BUN when significant hypotension was achieved, unless readjustments in dose were made (Figure 5). Patients with severe impairment of kidney function (*i.e.,* BUN 50 mg. or more) need extremely close supervision when given guanethidine (as with ganglion blocking drugs) to prevent further loss of renal excretory function and uremia. One patient (No. 12) with pyelonephritis, whose infection was treated concurrently, had a fall in BUN while on effective doses of guanethidine. In routine urine studies (weekly for 4 weeks, monthly thereafter), there was no sign of intrinsic renal damage, nor were unusual renal changes noted in the 5 autopsies. Two patients had clearing of 2+ to 4+ proteinuria while on the drug.

Relative bradycardia developed in all patients at some time during guanethidine administration and tended to persist if effective blood-pressure-lowering doses were continued. There were no problems associated with these slow rates, although one patient on digitalis had a fall in rate to 34 per minute, and another (not on digitalis) frequently had pulse rates below 40 per minute. Because of their tendency to develop high pulse pressures with elevation of systolic pressure, 9 patients were given hydralazine as an additional hypotensive agent to increase the pulse rate and lower the systolic peaks.

Orthostatic hypotension was noted in all am-

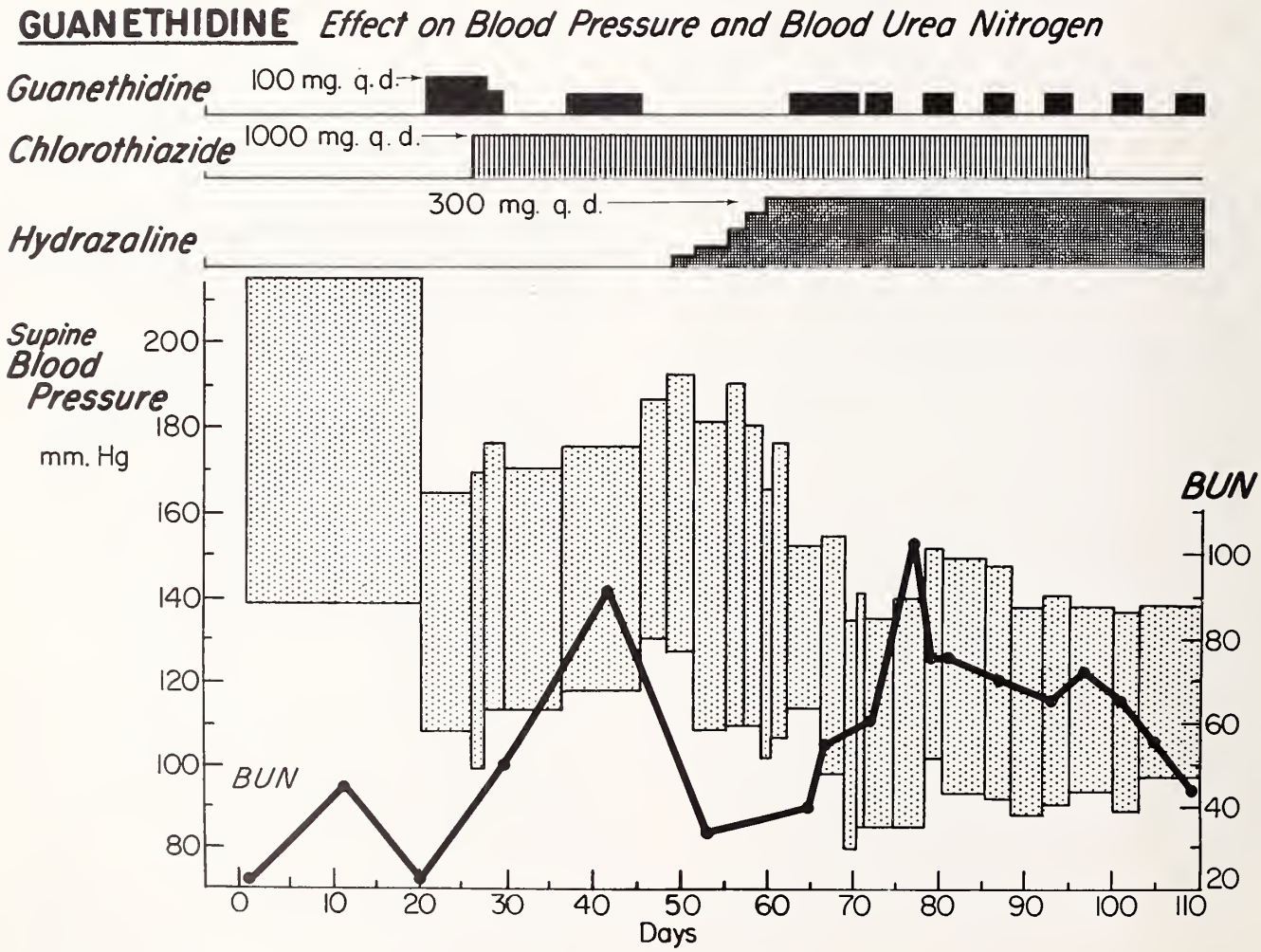

Figure 5. Patient M. A. (No. 13). When blood pressure fell after guanethidine, blood urea nitrogen (BUN) rose. As blood pressure return toward control levels in the period from the 45th to 55th days, BUN rapidly fell. Subsequent adjustment of guanethidine dose (so that patient took 50 mg. daily for 3 days each week) maintained the blood pressure reduction even when chlorothiazide was discontinued. On this program, there was a steady fall of BUN toward control values.

bulatory patients, severe in 3, mild to moderately severe in 14 others. It usually appeared between the second and seventh day, and persisted in varying degrees during therapy. It was less of a problem after the initial days, however, because patients were able to adjust to it and because there was development of tolerance to guanethidine. One patient had a cerebral thrombosis during an orthostatic hypotensive episode (see above). Excessive fall in upright pressure always occurred before optimal reduction in supine pressure and was one of the major limiting factors in therapy. Even when orthostatic pressure was very low, the fall in supine pressure in most patients, before other antihypertensive drugs were added, was not great.

Fatigue was not a prominent complaint in our patients, possibly because many of them had previously been on ganglion blocking therapy. Several mentioned this symptom, and 2 (No. 14 and No. 23) cited it as a major problem. We did not observe myalgia with muscle weakness, as described by Leishman, Matthews, and Smith.[10]

One patient (No. 16) developed blurring of vision with guanethidine when she also was having excessive falls in upright pressure. This blurring persisted for 3 weeks after therapy with guanethidine was discontinued. No local causes for the blurring were found.

Dry mouth, constipation, and difficulty in micturition were not encountered in this study. Those patients who had previously been on ganglion blocking therapy were relieved of these symptoms remarkably quickly, as well as of blurring of vision, when guanethidine was substituted.

In general, our patients were quite ill and were hospitalized during a large part of the study. For these reasons we have little knowledge of how guanethidine affected potency and ejaculation. Two patients (No. 1 and No. 14), previously on blocker therapy, voluntarily reported return of potency when guanethidine's effect on blood pressure was apparent.

It was difficult, also, to evaluate the effects of this drug on the central nervous system. We believe that use of it lessened anxiety in our patients. Most were better satisfied with guanethidine than they had been with previous ganglion blocker therapy. It is probable that the lack of parasympathetic blockade was responsible for most of these reactions, although a direct cerebral effect cannot be discounted. Because we were impressed with the lessening of anxiety, we attempted to dissociate the hypotensive and cerebral effects in one patient (No. 22) without hypertension. This 41-year-old teacher had been troubled for many years by bouts of anxiety, with tachycardia and palpitation, which made it impossible for him to get his work done. On small doses of guanethidine, he had little fall in blood pressure, a fall in average pulse rate from 96 to 80 beats per minute, and lessening of symptoms. Despite the considerable clinical improvement, the highly suggestive situation makes it difficult to ascribe the cause for this with certainty.

We recognized no depression; nasal stuffiness, frequently seen with rauwolfia products, was also not noted.

Regular blood counts and liver function studies (including bromsulphalein and cephalin flocculation tests and serum protein determinations) were done on the first 5 patients during the first 8 weeks of therapy. These did not reveal evidence of malfunction. Subsequent periodic physical examinations and monthly hemoglobin and white count determinations have yielded no suggestions of hemopoietic, liver, or central nervous system disease associated with guanethidine therapy.

Dose. Fifty-seven milligrams of guanethidine was the average daily dose given to our 24 patients during a total of almost 2,500 patient days of therapy. There has been a distinct tendency for drug requirements to increase in long-term therapy. Thirteen of the 21 patients treated for more than one month have had an increase in blood pressure necessitating additional guanethidine or supplemental drugs to maintain initial blood pressure reductions. During the latter portion of the study, the daily requirement of guanethidine was given at one time. We observed no advantage in dividing the dose.

CONCURRENT THERAPY WITH OTHER HYPOTENSIVE DRUGS

Thiazide derivatives and hydralazine were evaluated in combination with guanethidine.

The thiazides did not cause the sharp drop in blood pressure when added to guanethidine that has been noted when they are given with a program of ganglion blocking drugs.[11] Chlorothiazide (1 Gm. per day) was an adjunct to guanethidine therapy in 9 patients, and evaluation of its effects was possible in 6 of them. In 5 of the 6, supine blood pressure was lowered an average of an additional 10 mm. Hg (range 5-18 mm. Hg). In 1, hypotension *increased* for 3 days when chlorothiazide was *stopped.* We postulated that change in urine hydrogen ion concentration might have delayed excretion of guanethidine during the first 2 days off chlorothiazide treatment, thus enhancing its effect.

Hydralazine was used concurrently in 9 patients. As mentioned previously, we found that the bradycardia of guanethidine was partially corrected by hydralazine. We also observed moderate enhancement of hypotension when 100 to 400 mg. of hydralazine were used daily. We do not have precise figures on the amount of blood pressure reduction that occurred after this substance was started since, in most instances, doses of guanethidine were still being changed when hydralazine was added.

DISCUSSION

Hemodynamic responses to guanethidine in man are similar to those in animals, as reported by the

CIBA group[1-6] and by Page and Dustan.[12] These studies indicate that normal autonomic reflexes are interrupted following administration, but that vascular reactivity to norepinephrine is maintained or enhanced. Preliminary observations suggest that ephedrine does not liberate norepinephrine from its storage site in various human tissues after guanethidine, as it does normally.[13] It is known that hypertension occurs initially after acute administration of guanethidine in laboratory animals[1-6, 12] and that this response is similar hemodynamically to that following norepinephrine infusion.[14] Thus, a simplified view of events after guanethidine, in accordance with available data, suggests that preformed norepinephrine is released or displaced from tissue storage sites and norepinephrine synthesis at the same sites is stopped by guanethidine. The blood pressure reduction and change in reflex responses are manifestations of this pharmacologic block. Receptor cells continue to react to norepinephrine when it is available. There is adequate evidence to indicate that the defect in norepinephrine formation is not secondary to ganglion impulse blockade.[1-6]

Little information is available about the action of guanethidine on adrenal medullary synthesis of norepinephrine. It is conceivable that, if this catecholamine continues to form there, certain stimuli might cause its release. Large quantities of norepinephrine entering the circulation under these conditions could cause pronounced hypertensive overshoots. We monitored the blood pressure in our patients after tilting from supine to upright positions (and reverse) to see if such maneuvers were associated with significant blood pressure rises. Since they were not, we assume that important quantities of norepinephrine were not entering the circulation at these times.

Our clinical observations are similar to those reported by Page and Dustan.[12] We noted smaller dose requirements for guanethidine than they did, and our patients had greater decreases in renal function (as measured by the blood urea nitrogen).

We found this drug to be potent in lowering upright blood pressure but less effective in reducing supine pressure. It was remarkably free of toxic properties, and the chief side effects noted (orthostatic hypotension, diarrhea, and bradycardia) were either desirable or easily controlled. The lack of symptoms of parasympathetic blockade and a poorly defined but evident lessening of anxiety made patient acceptance good. Because of its ability to produce orthostatic hypotension, this drug, like ganglion blocking ones, must be given with caution to patients with signs of cerebral vascular insufficiency. Patients with azotemia also must be followed closely if given guanethidine, since the reduction in glomerular filtration may cause progressive renal excretory failure.

We could not assign any of the 7 deaths to guanethidine therapy, since these patients had very severe hypertension with far advanced atherosclerosis and renal failure. One (No. 20) was not under effective blood pressure control when she died from cerebral hemorrhage.

SUMMARY AND CONCLUSIONS

1. The response of blood pressure and pulse rate to tilting, to the Valsalva maneuver, to norepinephrine and ephedrine infusions was studied in hospitalized patients before and after guanethidine.

2. No hypertensive overshoots were observed after tilting or in the recovery period following the Valsalva test after guanethidine. Responsiveness to norepinephrine was maintained or enhanced in the treatment study. Observations in 2 patients show ephedrine effect on blood pressure to be the same or blunted after guanethidine; in contrast, after bretylium, ephedrine caused an increase in blood pressure over control.

3. Twenty-four patients were observed for 2,422 patient days on guanethidine therapy. While 7 died, the deaths were due to far advanced vascular disease and apparently were not related to toxic properties of the drug.

4. Significant orthostatic hypotension was achieved in all ambulatory patients, and less marked supine blood pressure reductions occurred in most. These reductions were associated with definite clinical improvement in 11 patients.

5. Guanethidine has remarkably few side effects. The absence of symptoms of parasympathetic blockade makes its use better tolerated by most patients than conventional ganglion blocking therapy.

6. Because of the orthostatic hypotension and reduction in glomerular filtration rate which guanethidine produces, it must be used with caution in patients with cerebral vascular insufficiency and renal failure.

ACKNOWLEDGMENTS

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Protective Taping in Athletic Programs

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ADHESIVE STRAPPING can be used both to prevent and to treat minor athletic injuries. Adhesive tape is used to prevent injuries because of its ability to immobilize a joint, partially, and to hold soft tissues such as fascia, muscles, tendons and ligaments so that they cannot be stretched to the point of pain or tearing. In the treatment of minor injuries, the strapping is used for immobilization as well as to provide a protective covering for wounds, blisters, skin lesions or infected areas.

Adhesive tape is available in several different forms, differing only in the types of backing that have been designed to meet specific needs and requirements. The tape consists of bleached muslin of differing weights, on which an adhesive mass has been applied. Waterproof tape contains the same adhesive mass, but the backing is of heavier muslin with a white waterproof coating. A newer type of adhesive is the elastic adhesive tape made with a surgical adhesive mass and an elastic backing cloth. Another type of tape, used primarily for cushioning purposes or for affixing traction apparatus to the limbs, is called "moleskin." It also contains the same adhesive mass, but has a thick, soft, napped cotton backing cloth. Besides adhesive tape, there are two other useful types of wraps, the canvas wrap and the elastic wrap made of loosely woven fiber.

PREPARATORY STEPS

Before any tape is applied, the part should be shaved, cleaned and dried. In the shaving process, we have found, young men are less likely to nick the skin or cut themselves if they use electric clippers rather than a safety razor. Any laceration should be covered with a thin layer of sterile gauze or one of the newer non-adhering plastics. The use of organic solvents to remove oily contamination should be avoided, for they remove all of the natural oils from the skin and may serve as irritants. Manufacturers of adhesive tape claim that it is unnecessary to use a protective covering such as benzoin on the skin, but we have found that the skin must be protected if tape is to be applied before every practice session and game. Tr. benzoin affords a good base, but many individuals are sensitive to it. At S.U.I. we use Tr. rosin as the protective coat, since it is less irritating, has better adhesive qualities than benzoin and is relatively inexpensive. Tincture of rosin can be prepared very simply by adding one pound of commercial powered rosin to one gallon of any alcohol, even bathing alcohol. If an athlete is sensitive both to benzoin and to rosin, then a stockinette is placed over the part and the tape is applied over the stockinette.

APPLYING AND REMOVING TAPE

Next, one selects the width of tape that will best fit the contours of the injured part. For young boys of junior high or high school age, widths from 1 to 1½ in. will suffice. For older players, 2 in. tape will be necessary. It must always be remembered that the inner side of the dressing is the part in contact with the skin, and thus is more important than the outer surface that everyone sees. Consequently the inner surface must be just as neat and free from wrinkles as the outer surface. Strapping should be firm without causing any constriction. The skin should be covered with gauze or a thin layer of foam rubber wherever the edges of the tape may cross. This will prevent irritation or blistering. Small areas of exposed skin should never be left between strips of tape. After the strapping, when movement produces undue tension and pain the strapping hasn't accomplished the purpose for which it was intended. In such instances it is best to remove the tape and reapply. In all strappings, the first strips should be applied parallel with the fibers of the muscle, fascia, tendon or ligament for good anchorage. Subsequent strips may run in any logical direction.

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Tape can be torn very easily and quickly if one goes about the job correctly. The strip of tape is held between the thumbnails and forefingers, and the tearing is started by a quick rotary twist of the hands in opposite directions. Tearing of tape doesn't require power or brute strength, but merely a "knack" that can be acquired after a few tries.

The proper method of removing tape is often more important than the technic of application. Young adults, as a rule, are very impatient and have a tendency to tear off a dressing as quickly as possible, with the result that they often tear or lacerate the skin. Bandage scissors are dangerous weapons in the hands of young athletes. Unless the tape has been loosened, the pressure of the scissors causes pain, and deep cuts of the skin are not unusual. Instead of scissors, we use a Gilcrest tape cutter, consisting of two tines or jaws, to the lower of which is attached a Shick Safety Razor blade. This inexpensive tool is used to split the dressing, and then the tape is pulled away from the skin slowly and gently. To prevent injury to the skin, one should hold the skin near the tape firmly, with the fingers of one hand, while pulling the tape off steadily with the other hand. If these simple directions are followed, abrasions, blisters, lacerations or infected hair follicles will rarely be seen.

PROTECTION FOR ATHLETES' ANKLES

Minor to moderately-severe injuries of the ankles can be avoided to a considerable extent through the use of the canvas ankle wrap. The material can be obtained in strips from 2 to 2½ in. wide. Strips of the proper length can be cut, usually about 72 in. long, and each athlete can be given a pair for his own use. These wraps can be used over and over, and can be laundered when they have become soiled. The canvas ankle wrap is always placed over the sock. One puts a "figure 8" around the ankle twice, then carries the wrap around the heel, and finally repeats the "figure 8" around the ankle. The wrap is anchored by putting a "figure 8" strip of inch-wide adhesive on top of it. The dressing is applied with considerable force, and after gaining a little experience each player will know how tight the wrap should be. This simple dressing prevents many injuries by limiting inversion and eversion, and by locking the heel. We insist that every football player who hasn't had an ankle injury must wrap both of his ankles prior to every practice session and every game.

Any athlete, but particularly a football player, who has had a previous ankle injury is required to have the ankle strapped with adhesive tape prior to every practice session or game. We have found the so-called "western wrap" most efficient, for it can be applied easily and quickly. It prevents eversion and inversion, and it holds the ankle mortise to its normal position, yet allows flexion and extension. After the ankle has been properly prepared, a thin piece of gauze or foam rubber is placed over the instep to prevent blistering or irritation where the tape edges cross. The foot is held in a neutral position, rather than in marked dorsiflexion. A two-inch-wide piece of tape is placed from well above the ankle down over the internal malleolus, under the foot just anterior to the heel, then up over the external malleolus to the same height as the other side. A strip is started just above the external malleolus, is brought under the foot, and then is crossed over the instep to the opposite side. The next strip starts just above the internal malleolus and is brought under the foot and then over the instep to the opposite side. Depending upon the size of the individual, a second set of two-inch strips can be put in place. This is then anchored by winding one-inch tape in a circular manner, near the top of the tape. If the circular strip isn't wound too tight, there is no interference with circulation. Once a trainer or physician has learned to apply this basic wrap, he can modify it to meet any special condition.

The standard basket-weave wrap takes considerable time to apply and requires more tape than the western type. Because it is open in front, it doesn't immobilize the ankle mortise. The basket weave is used shortly after a sprain has occurred, since it can expand as the ankle swells. After the acute swelling has become fixed or begins to subside, it is then best to use a western-type dressing.

THE TAPING OF OTHER BODY AREAS

Since it is beyond the scope of this paper to describe all of the various uses of taping, we can mention only a few of the other areas where this procedure can help. Separation of the acromio-clavicular joint can occur while an arm is in abduction and forward flexion, as a result of a fall on the point of the shoulder, with depression of the acromion. Most of the dislocations that we encounter are of the superior type, with stretching or tearing of the superior articular ligament of the acromio-clavicular joint and the coraco-clavicular ligament.

As soon as this injury has been diagnosed, one places a small square of felt over the separation and another under the elbow. With the elbow flexed, a two-inch strip of tape is placed over the felt on the shoulder, and with considerable pressure it is carried around the felt at the elbow. The arm is then anchored loosely to the chest by means of an elastic bandage. This allows free motion of the forearm and hand, thus enabling the athlete to continue with his school work. Since the dressing is simple, the boy can remove it to shower and then reapply it. After 10 to 14 days, the athlete is ready to participate in light contact practice.

Then, a piece of felt is placed over the injured area, and a series of strips of adhesive are placed over the felt, with pressure, to form a molded cup over the shoulder. This protection can be reinforced by wrapping an elastic bandage over the shoulder and arm, and across the upper chest.

Injuries to the crest of the ileum or lower lateral abdominal wall are quite common and very painful. In football parlance, this injury is called "the hip pointer." To avoid excessive pain, the player leans toward the injured side so as to prevent the injured muscle from stretching. For this condition, one places a two-inch strip parallel with the lower ribs, and places another strip just below and along the iliac crest. With the athlete leaning slightly toward the injured side, one then places two-inch strips vertically from the upper to the lower of the previously positioned pieces of tape. This arrangement acts as a brake, preventing stretching or pulling of the torn muscle fibers.

The trainer's hot pack is one of the commonest dressings used on athletes for minor aches and pains. Methyl salicylate ointment is applied generously with a tongue blade over the painful or injured area. This is covered with a layer of absorbent cotton, held in place by gauze or by a muslin bandage. Such a dressing feels warm because of the counter-irritant effect of the methyl salicylate. There is some reason to believe that the ointment acts on the pain receptors in the skin, blocking the reflex arc and allowing relaxation of the underlying muscle. This dressing can be left on overnight and reapplied after the next practice session or game.

The proper application of adhesive tape can prevent many minor injuries and assist in the treatment of these disorders, but often too much tape is used with little thought as to the type of injury to be prevented or treated. We have found that experienced trainers can apply tape more evenly and smoothly than most physicians.

Finally, it is necessary to stress the fact that the success of adhesive bandaging depends upon careful reexamination of athletic injuries by an interested physician.

Physical Therapy for Athletic Injuries

in High School Programs

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PHYSICAL THERAPY constitutes a major portion of the treatment of most athletic injuries. To carry out the various modalities, simple, homemade equipment can be more efficient and adaptable than the more expensive apparatus. The first requisite, particularly at the high school and college levels, is a clean, well-ventilated room, having hot and cold water and adequate electrical outlets. The basic equipment may consist of treatment tables, mats, pulleys and weights, as well as a tank for hydrotherapy. With these inexpensive appliances, one can treat minor injuries such as sprains, strains and contusions, and can carry out exercises to strengthen muscles. Furthermore, a balanced pre-season training program can prevent or at least minimize many of these injuries.

An easy way to acquire most of the equipment mentioned above would be to have the manual training department in the school construct an exercise table measuring 28 in. high, 3 ft. wide and 7 ft. long. The top should be covered with approximately two inches of padding and a plastic cloth. To this table can be added a frame at each end with a suitable arrangement of pulleys for giving resistive exercises to both the upper and lower extremities, (Figure 1).

Instead of expensive weights for the resistive exercises, a two-pound coffee can with a loop of wire across the top can be filled with bolts, lead, stones or window-sash weights. When the weights are used with pulleys and rope, one end of the rope is hooked to the cuff of a boot that is fastened to the foot. The same pulley and weight arrangements on the table can be used for arm and shoulder exercises. The mats can be placed on the floor in a position that will allow for a wide variety of resistive and assistive exercises. We believe that it is unnecessary to purchase expensive equipment, and therefore we shan't discuss such things as diathermy, microwave therapy, galvanic stimulators, ultra-sound apparatus and complicated exercise tables. Recently, those responsible for high school athletic programs have been purchasing various types of vibrators and vibrating tables for

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the treatment of injuries. As yet, however, there has been no documented evidence that vibrators have any physiologic or therapeutic effect.

HEAT AND COLD TREATMENTS

Cold can be applied to an injury by means of either an ice pack or a tank of cold water. The water used for cold treatments should be at a temperature of 45°F. The usual treatment time in the cold bath is 15 to 20 minutes. Ice packs are prepared by putting chipped ice into plastic bags of the type used in grocery stores or supermarkets. A thin towel is wrapped around or placed on the injured part, and the ice packs are molded over the area. These can be held in place by wrapping a bath towel around them. The ice packs can be kept in place for 10 minutes, then removed to make sure that the skin has not been injured, and then reapplied.

Dry heat, either luminous (electric bulb) or non-luminous (electric heater) can be used, provided that the apparatus is placed at a proper distance from the patient so as to avoid burns—i.e., 25 to 32 in. from the injured part. It must be mentioned at this point that *infrared* is merely another word for heat. Treatments of this sort have no special or magic powers. The treatment time averages approximately 20 minutes. If moist heat is prescribed, it can be readily given by placing a hot, moist towel over the part and then irradiating with a heat lamp. The hot pack provides another method of applying moist heat. The necessary equipment consists of a bucket of water, a hot plate, an inexpensive, small, manually operated wringer or a mop-bucket wringer, three bath towels, and some thin woolen sheets about 40 inches square. The water containing the towels is heated to 150°F., and then one towel is removed, run through the wringer to remove the excess water, and placed on the woolen cloth. The woolen sheet is folded around and over the towel to prevent loss of heat, and then is placed over the injured part. While the first pack is in place, a second towel is prepared, and then a third and perhaps a fourth, as required. The first pack is left in place for three minutes, the second for five minutes, and the third and successive packs are left in place for eight minutes each. The hot pack treatments should be repeated twice a day until swelling and/or pain has diminished. In addition to its inexpensiveness, the major advantage of this type of pack is the ease with which it can be molded over any part of the body. Following each application of the pack, the injured part should be carried through a range of motion. The basic exercises will be described later.

When heat is prescribed for a large area such as the back, it can be applied with a homemade baker. A piece of sheet metal is bent into a half-oval shape, high enough to fit over the patient's back or legs. Usually the device is built at least 24 in. high, and its length will depend upon the size of the treatment area for which it is to be used. A baker 18 in. long could be used for treating parts of arms or legs, and one at least 3 ft. long could be used over the torso. From one to three light bulbs of not over 40 watts are suspended from the top of the baker. It must be remembered that the inside of the baker is entirely enclosed, and thus heat is allowed to increase very rapidly. To prevent heat from becoming excessive within the apparatus, a few small holes can be cut into the top. The treatment time is not over 20 min., and can be given two or three times a day. Heat from such a baker will penetrate much more deeply into tissues than will heat from most other modalities. This form of treatment can substitute for the very expensive diathermy.

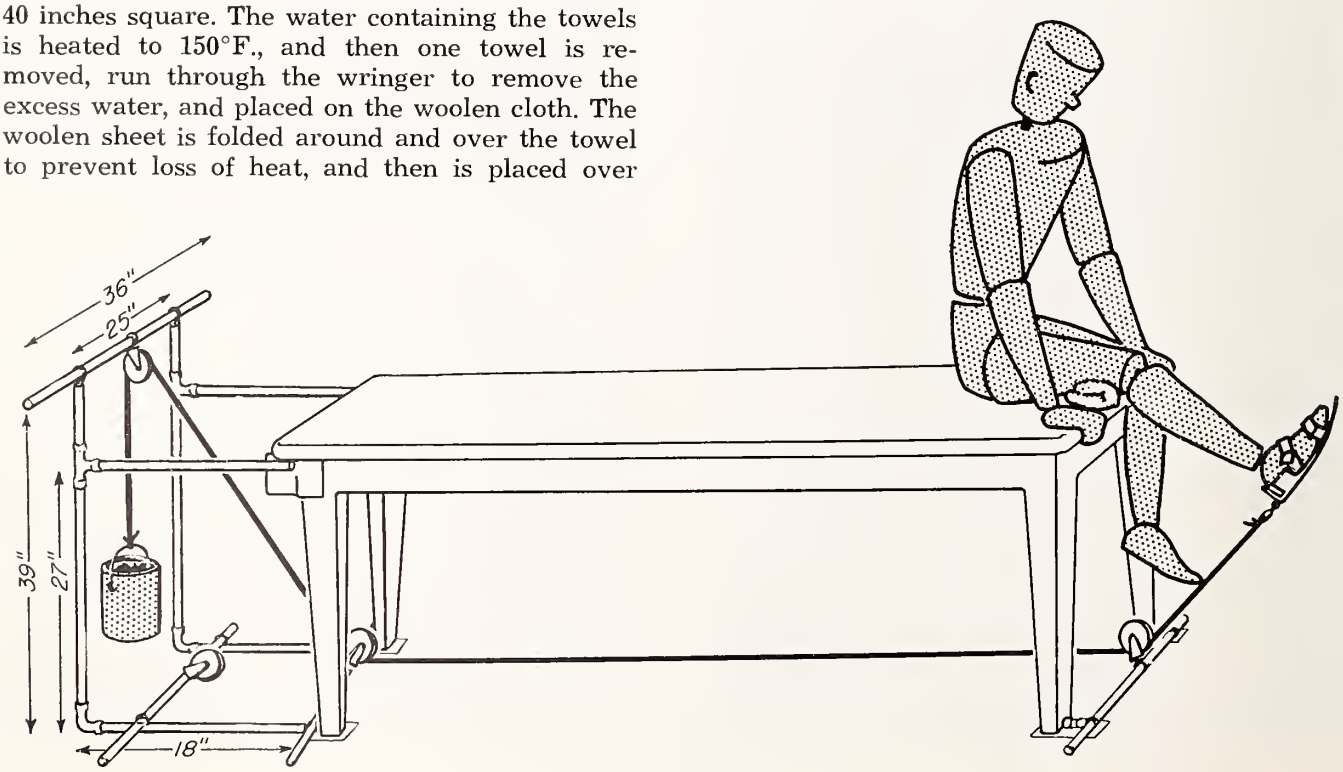

Figure 1. The exercise table, with a pulley and weight arrangement for extension of the knee against resistance.

Hydrotherapy, or the use of water, has many advantages over all other modalities in that it is inexpensive and readily available. Water can be used to conduct heat or cold into the body, and because it reduces the effect of gravity, it can be used to provide increased mobility to an injured or painful part. The contrast bath is simple to use and affords much relief for minor sprains or strains. Two scrub buckets or large basins can be used, one for the hot water (105-110°F.) and the other for the cold water (45-50°F.). The injured part is placed in the hot water for five minutes and then in the cold water for one minute. The alternations are repeated three or four times, and finally the extremity is put in the hot water for three minutes.

Another simple underwater treatment is given by filling a bathtub or wash boiler with water of about 95-100°F. and immersing the individual (in the tub) or the injured member (in the wash boiler). Then, by means of a piece of garden hose held about four inches from the injured part, the flow of water is directed against it. The water should be at the same temperature as the bath. The subject can then exercise against this resistance. If more pressure is desired, the operator can hold his finger so as partially to cover the outlet of the hose. This form of treatment is tiring and should not be administered for more than 15 minutes at a time.

The whirlpool bath provides another means of arranging resistance exercises against a flow of water. This is nothing more than a tub or wash boiler into which a pipe from a mixing faucet has been placed so that the inflow of water will cause a whirling action. At times, air bubbles are mixed with the water to bombard the skin. This has little physiologic value, but apparently some psychologic effect. The important factor is to have a stream of water that can be used for both assistive and resistive exercises.

Massage plays only a minor role in the treatment of athletic injuries. The various types of rubbing such as hacking, slapping, beating, ironing or mass kneading should never be used. The only type of massage which may benefit an athlete is the gentle effleurage or stroking. First, the skin of the injured area is lubricated with mineral oil or cold cream. Then one should glide relaxed hands along the part being treated, allowing them to conform to the contour of the limb or back. The stroke starts at the most distant part, and firm pressure is maintained as the hands are moved toward the center of the body. The hands are not lifted from the part on the return stroke, but less pressure is applied. This type of massage has a sedative effect, and often helps to relax the athlete.

THE THREE-POINT GAIT

Following a severe ankle injury or perhaps a fracture, the athlete may have to ambulate with crutches. To have crutches available at all times to fit athletes of varying heights, it is better to purchase one or two pairs of the adjustable kind, rather than many pairs of the standard non-adjustable type. The proper length of crutch can be ascertained by measuring from the tip of the axilla to the bottom edge of the sole of the shoe. To this distance one must add two extra inches. The hand piece should be placed at the level which allows about 30° flexion at the elbow. Another method would be to place the crutch at the individual's side with the arm hanging loosely, and attach the hand piece at the level of his wrist. It is very important to impress upon the subject that the weight of the body must never rest on the top piece of the crutch. Pressure in the axillae often may cause brachial-plexus injury, with a resultant mild weakness or paralysis of the arm and hand.

Before ambulation is attempted, the individual should stand with his back against a wall where he can be shown how to use his arms and hands to support his body weight. Never should he be allowed to lean on his crutches. He is told that while holding the handles loosely he should distribute most of his weight to his uninjured leg and should keep the foot of the injured side on the floor. Although he may be unable to carry any weight on the affected side, the foot should touch the floor gingerly as if he were stepping on eggs. He should then shift his weight to the normal leg, placing the crutches about 12 inches forward and laterally, and at the same time moving the injured extremity forward to a point in line with the crutches. He should then shift his body weight to the crutch handles, allowing only minimal weight to rest on the injured leg, and then should move the normal foot six to 12 inches ahead of the crutches. This completes the so-called three-point gait. The purpose of placing some weight on the injured leg is to enhance healing by maintaining muscle tone and proprioceptive reflexes, and by encouraging early callous formation.

EXERCISES

As soon as the patient starts to ambulate, he is taught quadriceps exercises. He is seated on a table with both legs extended, and is shown how to tighten the anterior thigh muscles on the normal side. Then, he is asked to do the same on the involved side. If he cannot perform this exercise, he is asked to raise the heel off the table while tightening the thigh muscles. Those who can flex their knees slightly are told to place a hand behind the knee and press against the hand while tightening the thigh muscles. Ten repetitions of quadriceps setting should be done every hour during the day.

A week later, foot and ankle exercises are started, unless the leg is in a cast. The individual is seated on a table with his leg dangling free. The lower leg is kept stationary while the foot is slowly elevated up and out, and then returned to the starting position. This exercise is done 20 times, and after a brief rest is repeated 20 times. After another brief rest period, the foot is slowly ele-

vated up and in, and returned to the starting position. This too is done 20 times, and then repeated for another 20. Both exercises can be done at least three times a day.

After the swelling has subsided and the pain has become minimal, progressive resistive exercises (P.R.E.) can be started. The only equipment needed is a homemade canvas sack, weights (which can be stones, broken sash weights, pieces of lead or broken pieces of cast iron), a pulley and some lightweight rope. If the exercises are for the quadriceps, the subject sits on a table, and the canvas bag is hung on the foot. The leg is elevated slowly until it is completely extended, and then after a brief pause it is lowered slowly to its original position. The maximal load that can be lifted is determined by adding weights to the sack until 10 repetitions of the exercise cause muscle fatigue. The exercise is carried out for 10 repetitions with one-half the maximal load, and if no fatigue ensues it is repeated 10 times with three-fourths of the maximal load. On the next day, 10 repetitions are again performed with three-fourths the maximal load. On the third day, the exercises are started with the maximal load, and if the muscles do not tire, they are repeated with one pound added. Usually an extra pound can be added every second or third day until a plateau has been reached. Exercising twice a week against the final maximum load will maintain muscle strength and secondary hypertrophy.

A few days after a shoulder dislocation has been reduced, assistive exercises can be started to maintain a maximum range of motion. The athlete is seated in a chair, and with the arm placed against the side of the chest, the elbow is held at a right angle, with the forearm and hand resting on the thigh. The hand and forearm are assisted in moving toward the abdomen, and then they are returned to the original position. Care must be taken not to carry the forearm beyond the neutral or starting position. The second exercise is started with the arm at the side and the elbow extended. The arm is slowly raised sideways to shoulder level, always keeping the palm turned toward the floor. If a shoulder dislocates easily, it is unwise to raise the arm more than half the distance to shoulder level. Both exercises are repeated 20 times, twice a day, with a brief rest period after the first 10. The assistive exercises are continued for anywhere from one to two weeks.

Then the resistive exercises are started. The subject is seated with the injured shoulder facing the pulley and weight. The arm is placed against the side of the chest, and the elbow is flexed to 90°, with the forearm and hand resting on the thigh. A one or two pound weight, depending on the size and strength of the individual, is placed in the coffee can which is attached to one end of a rope. The rope is placed over a pulley, and after it has been pulled taut, it is looped around the hand. The hand is moved to the abdomen against the resistance, and then is slowly returned to the starting position. At no time should the elbow be moved away from the chest wall. The exercise can be done twice a day, on the average, going through 10 repetitions and then another 10 after a brief rest (Figure 2).

The second exercise is carried out with the subject seated in the same position, but with the arm held at shoulder level and with the palm turned toward the floor. Again the rope is pulled taut, and the arm is slowly lowered to the side. The weights assist the arm to return to shoulder level. This, too, is repeated twice a day, each 20 times. At intervals of two or three days, an extra pound of weight is added. The amount of weight used depends upon the tolerance of the individual. These exercises should be continued for a period of from six to 12 months. With such simple material, resistive exercises for any part of the body can easily be carried out (Figure 3).

CONCLUSION

The success of all physical therapy depends on good medical prescription and follow-up. Physical therapy can assist in shortening the time that an injured athlete remains out of competition. Resistive exercises strengthen muscles and should be a part of all pre-season training.

There is no school, large or small, that cannot afford the essential equipment: a table, weights, water and heat. These are the basic ingredients for preventing and for healing athletic "injuries."

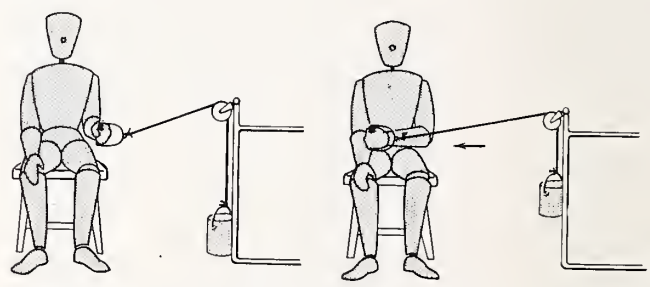

Figure 2. Left, the starting position for exercise to strengthen dislocated shoulder. Right, the forearm is now brought across the trunk in the exercise position. The elbow is kept tight to the side.

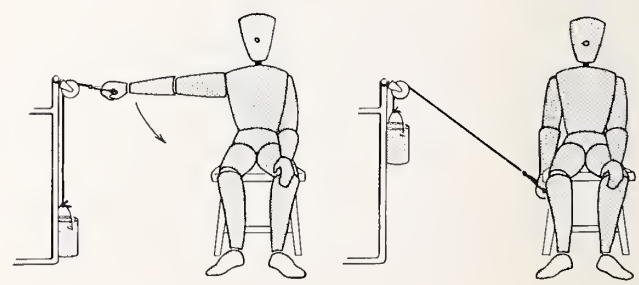

Figure 3. (Left) In the second exercise, the arm is held at shoulder level, with the palm turned toward the floor. (Right) The subject pulls slowly against the rope and weight until his arm is straight down at his side.

Physical Therapy in the Treatment Of Fractures

JOSEPH A. SZUHAY, M.S., R.P.T.
IOWA CITY

THE MAIN OBJECTIVES of the physician in the treatment of a fracture are approximation of the ends of bone, alignment of the bone ends in as normal a relationship as possible, and immobilization of the fracture site until healing has taken place. The objective of physical therapy in the fracture case is the reestablishment of normal function in the affected extremity, in so far as is possible.

"PRE-REDUCTION" TECHNICS

Early application of physical therapy has been advocated in the "pre-reduction" period whenever the fracture has been accompanied by severe trauma to the surrounding soft tissue. Hemorrhage into muscles, fascia, joints and areolar tissue may be indicated by discoloration and swelling of the affected area, or it may be evidenced by no more than a comparatively small hematoma in the region of the fracture. When either open or closed reduction must be delayed for several days, the cautious use of heat and massage hastens the application of definitive treatment, inasmuch as the condition of the soft tissue is improved. Heat, in the form of hot packs, hydrocollator packs or infrared heat lamps, may tend to increase the arterial circulation, which in turn may increase the edema and swelling. Therefore, heat should not be used alone, but should be accompanied by massage, elevation of the affected part, or active contraction of the muscles in the area.

"POST-REDUCTION" PHYSICAL THERAPY

During the "post-reduction" period, physical therapy treatments help to remove the tissue changes caused by the fracture and manipulative procedures. Early application of physical measures has been facilitated by improved fixation methods such as bone operations and direct bone traction by use of Kirschner wires, tongs and pins, as well as the suspension traction apparatus. Movements of joints which do not interfere with the alignment of the bone ends should be encouraged, and the patient must be convinced that active motion will not be harmful.

During the first few weeks after the fracture has been reduced and the fracture line immobilized, the removal of hemorrhage and edema can be accomplished most efficiently by means of active exercise. "Muscle setting" or actively contracting the individual muscles of the injured extremity without any actual movement of the joints is carried out by the patient several times daily. These muscular contractions increase circulation by squeezing upon the veins which are provided with valves to prevent the blood from flowing in a distal direction, thus allowing a more efficient exchange of oxygenated blood. Relaxation of these muscles permits the emptied veins to be filled from the distal portions of the extremity, and the process is repeated by subsequent "setting" and relaxation. Elevation of the extremity is also effective in removal of swelling.

Heat of a constant low degree has a sedative effect and also increases circulation in the part, but if it is used alone it may result in the return of pain. Greater swelling may remain after the heat is removed, and this may cause decreased motion in the joints instead of the desired increase. Massage, using the superficial stroking method, should follow the application of heat for removal of exudate, relief of pain, sedation and increase of circulation. The venous flow thus will decrease the swelling of the extremity. During this initial period, the physical therapy procedures must be entrusted to the skilled and gentle hands of either the physician or a physical therapist acting under the physician's direction. All early physical measures not only must be free from pain but also must relieve pain, for they must overcome muscle spasm. Careless or vigorous treatments may cause displacement of bony fragments.

In the later stages, the objective of physical therapy is to prevent adhesions and retard atrophic changes in joints and muscles. Exercises are the most important measures carried out at this time. They are usually classified as either active or passive. Active exercises are subdivided into assistive, free and resistive, whereas passive exercises are subdivided into relaxed motion and forced motion. Relaxed passive motion could be used in the early treatment of fractures, but is infrequently obtained, inasmuch as the patient voluntarily or involuntarily contracts his muscles in anticipation of the motion to follow. Displacement of fragments can be expected from this early, uncontrolled ac-

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tivity of the muscles near the fracture site, and therefore supervised active exercises are more practical during the first three or four weeks. Assisted active motion is accomplished when the therapist supports the part to eliminate gravity and the patient carries out the motion within the limits of pain. The earliest sign of pain usually prevents the patient from increasing the motion, and thus the fragments are undisturbed.

Electrical stimulation is also used whenever voluntary motion may be impractical or impossible, but the electricity should be used gently, painlessly and without causing spasm. Faradic current is used when the nerve is intact, and interrupted galvanic current is applied when the nerve has been severed and the nerve endings are degenerated. This electrical stimulation will also help retard muscle atrophy and circulatory dysfunction.

"AFTER-TREATMENT" PROCEDURES

The "after-treatment" begins after the bony callus has become firm enough to allow the discarding of splints, casts or other apparatus. Several conditions are apparent in the extremity which call for changes in physical therapy procedures. The muscles of the affected part may be wasted and atrophic following prolonged immobilization. The nonresilient consistency of the muscles is readily detected upon palpation, and they are weaker and inelastic when moved. Stiffness of the joints in the area of the fracture usually indicates a decreased range of motion, and produces pain when either passive or active motion is attempted. Upon palpation, there usually is tenderness in the area of the fracture.

During this stage, several methods of physical therapy treatments may be employed to develop a normal range of motion in the joint and to alleviate pain. In addition to the physiological effects previously mentioned, there is an effective softening of fibrous adhesions from the use of heat upon the extremity. Moist heat may be of greatest value, inasmuch as it alleviates pain and produces the most relaxation of the muscles involved. The whirlpool bath—a tank of water heated to approximately 105°F., through which a stream of air is forced by means of an agitator—is often utilized to relax the muscles and stimulate circulation. The extremity may be actively moved against the stream of air and water, or it may be moved passively with the aid of the current. The hydromassage effect of the bubbling, agitated water helps the circulation, and it also helps debride the skin surface when the extremity is immersed following prolonged immobilization in a cast or in skeletal traction.

The infrared heating lamp may also be used over a wet bath towel applied to the affected part. Hot packs, consisting of towels soaked in boiling water and wrung out, wrapped in 40 x 40 in. woolen blankets, can be made to conform to the affected areas more readily than can the hydrocollator pack. The hydrocollator pack is available in various sizes and is also soaked in boiling water and covered by six to 12 thicknesses of toweling before being applied to the affected part. The advantage of this method over the hot pack is that it holds the heat for at least 20 minutes without being changed, whereas several changes of hot packs are required.

Short-wave diathermy, paraffin baths and ultrasonic treatments may also be utilized by the physical therapist to heat the extremity. Massage usually follows the application of heat to reduce edema or to stimulate local circulation. Massage movements, including deep stroking, kneading and deep friction, aid in stretching the adhesions. Thus, a greater range of motion is obtained. Return flow circulation is aided by massage, and the centripetal force decreases swelling and increases nutrition to the area.

Exercises, used progressively, are directed to the development of motion in the joint. After the cast or apparatus has been removed, passive motion is obtained by the physical therapist's moving the joint through the range of motion to the point of pain. This motion is accomplished without the aid of the muscles of the extremity. Active assistive exercises are begun when the patient is able to move the joint through as large a range of motion as possible with the help of the physical therapist. Later, the patient moves the joint himself without help from the therapist, thus indicating musculature development. Manual resistance to the movement is offered by the physical therapist to aid in the development of muscles to their fullest capacity. Weights may be substituted for the therapist's manual resistance, and they can be increased as the muscles become stronger.

Stretching exercises may be started in order to obtain a maximum range of motion, but these should be used only as a last resort. Precautionary measures must be taken not to produce pain that may last for several hours following treatment. The stretching should be done to increase the range of the joint gradually and not too vigorously.

THE DOCTOR'S DIRECTIONS TO THE PHYSICAL THERAPIST

The major objectives in physical therapy treatments of fractures are to increase the range of motion of the joints, to strengthen the muscle power, to provide gait training of various types, to relieve pain, and to bolster the patient's morale and spirit. The physician in charge should direct the treatment by giving instructions, preferably in person, following a direct discussion of the problem. The physical therapist must have some direction in written form, if oral discussion is impossible. The physician should order specific modalities of treatment, preferably on a physical ther-

apy referral blank such as the one reproduced herewith. The data should always include: the patient's name, age and address, the diagnosis, the objective of treatment, special treatment required, the number of treatments desired, the date of the physician's next appointment if the individual is an outpatient, precautions, the date of the instructions and the physician's signature. The accompanying model physical therapy referral blank can be modified or utilized in any manner by the physician when he is prescribing physical therapy treatments for his patients.

MODEL

PHYSICAL THERAPY REFERRAL BLANK

DIAGNOSIS:

NAME AND ADDRESS:

AGE:

TREATMENT MODALITIES: (Put a circle around requested treatment)

1. Exercise
   - A. P.R.E.
   - B. Resistive
   - C. Assistive
   - D. Passive
2. Gait Training
   - A. Weight Bearing
   - B. Partial Wgt. Bearing
   - C. Non-Wgt. Bearing
3. Electrotherapy
   - A. Electrodiagnosis
   - B. Stimulation
4. Massage
5. Heat
   - A. Hot Packs
   - B. Diathermy
   - C. Ultrasonics (Dosage-Time)———
   - D. Paraffin
   - E. Moistaire
6. Hydrotherapy
   - A. Whirlpool (Temperature ——)
   - B. Hubbard Tank
   - C. Therapeutic Pool
7. Special
   - A. Muscle Testing
   - B. Home Exercises
   - C. Cervical Traction (Weight ——-Time ——)
   - D. Tilt Table

PHYSICAL THERAPY REQUEST AND NUMBER OF TREATMENTS

PRECAUTIONS (if any)

REFERRING PHYSICIAN ——————————M.D.

Record of Treatments and Progress Notes:

Results in Psychiatric Treatment Of Patients Temporarily Resident in A Small General Hospital

W. McCULLOCH CRAWFORD, M.D.

BURLINGTON

I SHALL MAKE THE following article brief, remembering Mark Twain's injunction against long-winded treatises, and I shall offer no more than modest documentation for it, since I am mindful of Bismarck's caveat against lies, damned lies and statistics. I wish to present a study of an uninstructed sampling by my office nurse of case histories that had been filed in numerical order by case number. The records are those of my psychiatric practice in a semi-urban community of 32,000 people and its rural surroundings in Iowa. The institution where they were patients is the 157-bed general hospital in town, and except for disturbed individuals, the patients were treated on the medical floor and shared rooms with other medical patients.

It should be kept in mind that although I am an American citizen, integrated as regards baseball, politics, *et al.*, it is generally supposed that I represent something of a threat to the native population, for by birth I am a Scot and I practice that allegedly expensive medical specialty, psychiatry. Thus, the referrals are limited, and the patients reviewed here are not necessarily representative of the mental pathology occurring in the community.

DIAGNOSTIC CRITERIA

It should be explained that patients are hospitalized on the following grounds: (1) that they are potential dangers to themselves, their families or the community; (2) that they can no longer get along comfortably in the outside world; and (3) that they need rest and relief from their previous responsibilities. Hospitalization was seen as an intercurrent phase of office treatment, and rehabilitation was sought by encouraging the patients to re-examine their attitudes and behavior toward their current reality situations.

The diagnoses that are listed follow the recommendations of the Committee on Nomenclature of the American Psychiatric Association.

The hypothesis on which I have based my treatment, is that a centrecephalic message-mixing center is located in the hypothalamus. Consider that it is both the highest vegetative center in the brain and yet, in its upper portion, part of the diencephalon; that it has many frontal and some premotor cortical projections in its nuclei; that it is contiguous with the thalamus (often considered the seat of emotions); that stimulation of its walls causes body-changes that prove it mediates the autonomic nervous system; and that there is recent anatomical proof that it manufactures the secretions of the pituitary gland.

Like a house thermostat, this hypothalamic mixing center may trip-in the heating or cooling plant when needed—i.e. the vegetative, body-chemistry apparatus including the autonomic nervous system and the endocrine system. Or it may activate the grey matter of the neo-cortex until the latter by experiment finds, say, a cure for beri-beri by isolating Vit. B_1. In such a manner may the mixing center maintain homeostasis within the limits to which it has been conditioned.

Such a hypothesis would offer a rationale for treatment of bodily symptoms of distress, thereby diminishing input from the vegetative side and at the same time dealing with the thinking disorder by helping the patient gain sophistication enough to limit recurrence.

The following diagnostic groupings have been used in Table 1. Their meaning in the light of this mixing center hypothesis, is briefly as follows:

1. *Reactive Depression.* The slowing of mental and physical functioning in response to high input of deprivation type in the hypothalamic mixing center.

2. *Involutional Melancholia.* The endocrine shift at the menopause causes acute feeling change in a deprivation setting, leading to a slow-down in mental and physical activity.

3. *Psychoneurotic Reactions*
   a. *Anxiety Type.* Excessive input at the mixing center sets repetitive thought-patterns, such as phobias, in motion, to channel some of the excess. The rest drain off into the physical syndrome of anxiety.
   b. *Conversion Type.* Excessive input is channelled into a particular organ system, as in peptic ulcer. Here, signs of thought-disorder or generalized physical tension are not immediately apparent.

TABLE I

1952-1960

Diagnosis	Decade of Life								Sex			Outcome				
	2nd	3rd	4th	5th	6th	7th	8th	9th	Female	Male	Average Number of Weeks Hospitalized	Improved	Contact Lost or Transfer	Unchanged	Diagnosis Only	Remission
Reactive depression	2	9	17	17	10	21	4	—	54	26	2.43	72	3	4	—	1
Involutional depression	—	—	—	5	4	—	—	—	7	2	3.17	5	2	2	—	—
Psychoneurotic reaction; anxiety type	2	12	15	9	7	1	—	—	32	14	1.69	39	4	2	1	—
Psychoneurotic reaction; conversion type	5	7	9	6	6	6	1	—	29	11	2.00	35	5	5	—	—
Schizophrenic reaction	4	18	19	—	—	—	—	—	29	12	2.79	13	23	1	2	2
Sociopathic disorders	—	—	—	2	3	—	—	—	1	4	2.60	4	—	1	—	—
Chronic brain syndrome (2 epilepsy)	—	—	1	1	—	4	6	2	10	4	2.22	4	4	2	4	—
Chronic brain syndrome (long term)	—	—	—	—	—	—	—	1	1	—	183.00	—	Deceased 1	—	—	—
Post-partum depression	—	1	—	—	—	—	—	—	1	—	3.00	1	—	—	—	—
Manic state	—	—	1	—	1	—	—	—	1	1	3.50	1	1	—	—	—
Paranoid condition	—	—	—	—	1	—	1	—	1	1	1.00	1	1	—	—	—
Psychoneurotic reaction associated with organic disease	—	1	—	—	—	—	—	—	—	1	1.00	—	—	1	—	—
Observation	1	1	—	—	—	—	—	—	2	—	1.00	—	—	—	2	—

4. *Schizophrenic Reaction.* On the mixing center hypotheses, the range of input that the center can handle is very small, because of the absence of stable discriminatory patterns of thought in the neo-cortex. The results are bizarre behavioral patterns, loss of the power of logical communication and distortion of interpretation of sensory input.

5. *Sociopathic Disorders.* Some examples of these are alcoholism, drug-addiction states and psychopathic behavior. Here, excessive input into the mixing center cannot be reasoned into acceptable behavior by the neo-cortex because of thinking defects. Addictive conduct is followed as a means of finding chemical relief, or the miscreant misbehaves in such a way as to force external control over him.

Except for genuine organic shutdown, all these reactions seem to be the consequences of a loss of approval validation for the patient's attitudes and behavior. This occurs, or is felt to have occurred, when a son has married and no longer pays so much attention as he once did to his mother; it can take place when a man loses his ability to support his dependents or no longer needs to do so; and it sometimes is the result of a patient's losing a close friend by death or by a geographical separation. Home, parent-child, husband-wife and work relationships, and community ties all help maintain mixing-center stability, and the disruption of any of them can produce instability. In other words, the human ego requires validating supports, and there are any number of ways in which it can lose them.

Insufficient input or challenge, on the other hand, results in boredom. This source of difficulty is seen in adolescents—particularly in girls, and in under- or over-supervised boys—and in unattended wives. The result, in the girls and women, is usually organic speculation (hypochondria), and in the boys it is random rebellious behavior (delinquency).

COMMENTS

The data from the random sampling of my cases between January, 1952, and May, 1960, are to be found in Table 1.

In our random statistical sampling, psychoneurotic reactions seem to be the major category, and reactive depressions are next most numerous. From the case histories of these patients, it appears that these predominances have been chiefly an accident of timing. In families where high anxiety levels are the rule, the patients don't come to treatment until they have reached a shutdown depressive phase. Among the neurotics who are actively symptomatizing, those with anxiety states are only slightly more numerous than those with conversion states. The grave recategorization defensive maneuvers of schizophrenic breakdown occur in the second, third and fourth decades, and prove irresolvable in a local hospital situation in the ratio of 15 "yes" to 26 "no." Of the chronic brain syndromes such as senility, I have had only four successes as against 10 failures in helping patients to a better adjustment—always provided that the sampling was typical.

It doesn't seem to have been important which medical maneuvers were used to refocus the patient's attention upon the doctor-patient relationship, whether sub-coma insulin therapy, electroshock therapy, sedatives or tranquilizers. What seems to matter is that the patient credits the doctor with the improvement he feels. The doctor is then granted interventional power over the patient's feeling states, and at this point reason can enter the picture and jurisdiction over feeling-states can be restored to the patient. With the reintegration and the reestablishment of personal control comes "cure," and it in turn provides us physicians with our own main ego-support.

The duration of the patient's hospital stay is not a reliable indication of how long it took to effect a cure, but is merely a gross average. For instance, the majority of acting-out schizophrenics were unhandleable in the general hospital and were quickly transferred. Of such patients in the sample, the one third of them who stayed and recovered were hospitalized an average of six or eight weeks. Electroshock treatment still seems the most useful tool for depression states. Lengths of hospital stay for patients in the neurotic groups are the times it took them to free themselves from disabling symptom-formation. An early return to home and work, and to reintegration into community life, was always advocated, sometimes at the expense of my having to readmit the patient for a few days more. Weekly treatment visits and interviews with relatives followed, until the patient had thoroughly coordinated his new mental attitudes with his handling of his problem-causing situations. When his new attitudes and behavioral approach had passed sufficient reality tests so that he had gained confidence in them, he was regarded as cured.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 75-YEAR-OLD WOMAN was admitted to the hospital because of hematemesis. Six months previously, she had vomited blood on one occasion and had passed dark stools for several days. A barium enema and a gastrointestinal series done by her physician were negative. She had had no further symptoms until two weeks before admission, when she had again vomited blood and had noted dark stools. On the day of admission, the patient had vomited blood and had fainted while having a chest x-ray at Oakdale Sanatorium. The patient's husband had died of pulmonary tuberculosis five months earlier, and she had returned to Oakdale for a follow-up chest film. During the previous two weeks, the patient had noted some distention of the abdomen and generalized weakness. There had been no food intolerance, no change in bowel habits and no weight loss during the present illness.

Physical examination revealed a blood pressure of 106/70 mm. Hg. The pulse was 120 per minute and regular. The respirations were normal. The lungs were normal. There was a Grade I systolic apical murmur, but no arrhythmia or cardiac enlargement. The abdomen was distended and soft. The liver was palpable three fingerbreadths below the right costal margin. Free fluid was demonstrable, and a hard, movable mass about 5 cm. in diameter was palpable in the left upper quadrant. A stool obtained on rectal examination was black and Meyer's positive. There was no peripheral edema.

The hemoglobin was 6.5 Gm. per 100 ml. The white count was 5,000 per cu. mm., and the differential was normal. After three units of blood, the hemoglobin rose to 9.5 Gm. per 100 ml. Coagulation and bleeding times were normal. Total serum proteins were 6.5 Gm. per 100 ml., with an albumin of 3.2 and a globulin of 3.3. The serum bilirubin was 1.4 mg. per 100 ml. A cephalin flocculation test was 1+ in 24 hrs. and 1+ in 48 hrs. The zinc turbidity was 10.8 units, and the bromsulphalein retention was 6 per cent.

A gastrointestinal series demonstrated esophageal varices, and a barium enema was normal. Gallstones and calcification in the splenic vessels were seen on abdominal x-ray films. A chest x-ray was normal. A paracentesis removed 1,000 ml. of straw-colored ascitic fluid. An examination of the sediment revealed no neoplastic cells. After paracentesis, the examiners stated that the mass was *fixed*.

The patient continued to bleed in spite of the insertion of a Sengstaken-Blakemore tube and blood transfusions. Six days after admission, a laparotomy was performed under hypothermia, to see whether an emergency portacaval shunt could be done. One thousand milliliters of ascitic fluid was removed. The spleen was found to be twice normal size. The gallbladder contained numerous small stones. The liver was normal. A large mass was palpable in the lesser sac. Clots were evacuated from the stomach through a gastrotomy. A shunt did not seem feasible.

After surgery, the patient continued to bleed faster than blood could be replaced. Thirteen days after the operation, she developed shock and died.

SUMMARY OF CLINICAL DISCUSSION

Mr. Thomas Bailey, junior ward clerk: My fellow students and I found ourselves faced with a rather perplexing situation. According to the protocol, the symptoms and findings might have been produced by either of two possible mechanisms. We decided that it would be quite difficult for us to choose between them, and thus to make a specific diagnosis, without having some additional data. These findings may have been omitted for very good reasons, or they may have been merely overlooked.

My first question has to do with the suggested portal hypertension. This is implied by the findings of splenomegaly, ascites and presumably some esophageal varices. Now, it is my understanding that esophageal varices are sometimes difficult to diagnose radiologically, and that splenomegaly and ascites can have many other causes. With this justification, I should like to ask whether the portal pressure was measured at laparotomy, and if so whether it was found to be elevated.

Dr. Edward E. Mason, Surgery: It was not measured.

Mr. Bailey: My second question is with respect to the mass. The protocol says that it was a large mass, that it was fixed and that it was in the lesser sac. I wonder whether anything in addition could be told us. For example, was it pulsatile? If so, was the pulsation expansile in character, and could we be told something about its consistency?

Dr. Mason: It was not pulsatile, and it was firm.

Mr. Bailey: On the assumption that portal hypertension was present—though we can't be positive about that—we can logically assume that the mechanism of death was hemorrhage secondary to rupture of esophageal varices, and that the varices had been produced as part of the collateral circulation secondary to portal hypertension.

Now we must look at the mechanisms for the production of portal hypertension. These may be classified as either intrinsic or extrinsic. The in-

trinsic cause is usually cirrhosis or some intrahepatic lesion, and it is our feeling that this lady's problem was probably not an intrahepatic lesion, because the laboratory findings were suggestive of only mild hepatic dysfunction, and if an intrahepatic cause were assumed, then the lesion in the lesser sac would remain unexplained. Thus, we must consider the possible causes of extrinsic or extrahepatic portal hypertension. First, this lesion may be a thrombosis of the portal vein or its radicals. Such a thrombosis may be due to trauma or pressure upon the vein, or may be idiopathic. Second, pressure alone without thrombosis may produce elevation in the portal pressure.

There was a mass in the lesser sac which we believe was producing external pressure on the portal vein. Whether or not there had also been thrombosis will no doubt appear in the pathologists' report of the postmortem examination. We must now consider the organs and structures situated in this region which might be capable of producing such pressure. In this group are included either kidney, either adrenal gland, an aortic aneurysm, enlarged periaortic lymph nodes and the tail of the pancreas.

This mass could have been an abdominal aortic aneurysm. It might have been inflammatory, or it might have been neoplastic. Since it was neither expansile nor pulsatile, it probably wasn't an aneurysm. Since the chest x-ray was negative and there was no history of pyrexia or weight loss, the mass probably wasn't due to tuberculous adenitis. We assume that it was a neoplasm, and most probably a benign one, since the history doesn't reveal weight loss. The neoplasm could have arisen from any one of the above structures. We feel that the best possibility would be a benign lesion of the pancreas—probably a pseudocyst, for such a lesion has been recorded as presenting as a mass in the lesser sac and as producing pressure upon and elevation of pressure in the portal vein, thereby causing findings similar to those reported in the protocol.

Dr. Richard D. Eckhardt, chief of medical service, Iowa City Veterans Administration Hospital: The CPC Committee has always been most fair in preparing protocols, but hasn't always chosen to present the simplest of cases for consideration. Remembering that the last one I was privileged to discuss was a case of pulmonary alveolar proteinosis, I have warned myself that the one which is to be discussed today may not be a simple illness such as the common cold.

Today we are discussing a lady who had enjoyed excellent health until six months before her death, at the age of 75 years. At that time she had a rather massive upper gastrointestinal hemorrhage, but presumably recovered completely and was well until nearly six months later, when a second episode of bleeding occurred. She didn't recover completely, and two weeks afterward, while having a chest x-ray, she bled again, fainted and was brought to this hospital.

Her abnormal physical findings, aside from pallor, included a liver felt a few fingerbreadths below the right costal margin, moderate ascites and a hard mass in the left upper quadrant. At first, this mass was thought perhaps to be movable, but after some ascitic fluid had been removed, it was felt to be fixed. The surgeon later localized it in the lesser peritoneal sac. The patient wasn't clinically jaundiced, but she had a mild elevation of her serum bilirubin. The other tests of liver function indicated mild derangements, particularly in the serum proteins—the albumin, globulin and zinc turbidity. The bromsulphalein dye retention was only very slightly increased—not much more than might have been expected on the basis of the mild elevation of her total serum bilirubin. The x-ray studies revealed esophageal varices. Previously, her family physician had done an upper gastrointestinal series and a barium enema. These had been normal.

Dr. Carl L. Gillies, Radiology: The stomach and duodenum were reported normal. The esophagus showed huge varices, and some serpiginous shadows were due to distended, coiled veins. The barium enema examination we thought to be negative except for showing two small gallstones. The chest was entirely negative.

The original report mentioned calcification of the splenic vein, but I fail to see it on the films. There was an amorphous calcification in the upper left quadrant, the nature of which is open to question. It could have been in the adrenal or in the tail of the pancreas.

Thus, the positive findings were esophageal varices, gallstones, and the amorphous calcifications in the adrenal area or tail of the pancreas.

Dr. Eckhardt: I had assumed from the protocol that this lady had, in fact, bled from esophageal varices. Therefore, it wasn't my intent in this session to discuss the differential diagnosis of upper gastrointestinal hemorrhage, but rather to discuss the factors which may have been involved in bleeding from esophageal varices.

I think the patient received very proper, prompt and adequate treatment from her ward physician. The x-ray was obtained, the varices were demonstrated, and a triple lumen tube was passed into her stomach. (As you know, one of the lumens is used for putting things in and taking things out of the stomach; another one fills a balloon which is pulled up against the cardiac end of the stomach under a little pressure; and the third lumen goes to a long sausage-shaped balloon which, as it is filled, compresses the veins in the lower end of the esophagus.) Unfortunately, this procedure didn't control the bleeding. Many blood transfusions were required. In a heroic effort to do some sort of side-tracking and thus lower the patient's elevated portal pressure, the surgeons subjected her to

hypothermia and entered the abdomen. Regrettably, the situation that they encountered didn't permit them to do a shunting procedure. The bleeding continued, and the lady died two weeks later.

We therefore are discussing the illness of a lady who had several episodes of severe, massive upper-gastrointestinal hemorrhage commencing when she was 75 years of age and resulting in her death six months later. It is entirely safe, I believe, to assume that her death was due to bleeding from esophageal varices. We can go further and say, quite reasonably, that her esophageal varices were secondary to severe portal hypertension. Such isn't always the case. The literature contains a few reports of varices in patients with normal portal pressure, but they aren't well documented and they have been few and far between. Thus, I prefer to assume that this patient had portal hypertension. The surgeons' observation that she had an enlarged spleen goes along with this very nicely.

Next, we must ask ourselves why this patient had portal hypertension. As you know, the portal vein is made up primarily of the splenic vein and the superior mesenteric vein. These two large veins join together to form the portal vein that carries venous blood from the entire gastrointestinal tract to the liver. The venous drainage of the liver is by way of the hepatic veins to the inferior vena cava and then to the right heart. Now, if this system is blocked, there is considerable back-pressure in the portal system, and portal hypertension results. Normally, the portal vein supplies a large portion of the blood supply of the liver—60-odd per cent—and the hepatic artery supplies the remainder. In severe cirrhosis of the liver with portal hypertension, only a trickle of portal blood goes to and through the liver. The tremendous amount of blood that cannot pass through the liver must get back to the heart in some way, and therefore it takes various collateral channels.

The one route that is most life-threatening—though all of the channels are of course important in getting blood back to the right heart—is that which goes through the esophageal plexus of veins. This plexus of veins becomes engorged, tortuous and distended, and is under greatly increased pressure whenever there is excessive back pressure through the coronary vein of the stomach. This vessel, also called the left gastric vein, is a tributary of the portal vein. It usually enters the portal vein directly, but occasionally it enters at about where the splenic and mesenteric veins unite to form the portal vein, and in about a quarter of the cases it enters the splenic vein directly. Thus, if there is obstruction in the portal system at any place proximal to the coronary vein, there will be back-pressure into the coronary vein, then into the esophageal plexus of veins, then into the azygos, hemiazygos and diaphragmatic system of vessels, and finally into the caval system so that the portal blood eventually reaches the right heart.

The esophageal plexus of veins is the danger area where these vessels can rupture and bleed massively. Perhaps this phenomenon is related to the negative intrathoracic pressure, to increased intra-abdominal pressure or to gastric-acid peptic digestion of the mucosa. The esophageal plexus of veins is located immediately beneath the esophageal mucosa, and its vulnerability to these various factors has been demonstrated by Dr. Gillies in the barium-swallow films.

I might briefly mention some other channels that are important in carrying blood back to the right heart from this obstructed portal system, but don't cause enough trouble to be life-threatening to the patient. One of them is at the bottom end of the intestinal tract—at the anus—where the superior hemorrhoidal vein of the portal system forms an anastomosis with the middle and inferior hemorrhoidal veins of the caval system to return portal blood by way of the inferior vena cava to the right heart. This is an important channel, but only rarely do we see serious bleeding from hemorrhoids in cirrhosis. I have seen only one instance where a man required multiple transfusions because of bleeding hemorrhoids, supposedly due to portal hypertension in cirrhosis. Another channel is through the periumbilical veins. As you know, we see these veins over the abdomen in cirrhotic patients. By various circuitous routes, these veins return portal blood to the right heart. There are other channels by way of the retroperitoneal and abdominal-wall areas. But the one collateral channel with which we are concerned today is the esophageal plexus of veins.

Now where was the block? Mr. Bailey, I think, has gone into this question very nicely. In by far the greatest number of instances, portal hypertension is due to an intrahepatic block, which in turn has resulted from cirrhosis of the liver. This is true in 80 or more per cent of the adult patients. How do we know that this patient didn't have cirrhosis of the liver? She had a mild elevation of her bilirubin. She had some abnormalities in her serum proteins. She had a slight elevation of her bromsulphalein. She had splenomegaly, portal hypertension and ascites.

Why didn't she have cirrhosis? Well, she was a nice elderly lady, and I don't want to diagnose her ailment as cirrhosis of the liver! However, I think we have some better reasons for seeking another explanation. She doesn't have a history of previous hepatitis, with long-standing disability. She doesn't have a history of partial biliary-tract obstruction, with chronic infection. She had gallstones, to be sure, but as far as we can tell they were entirely asymptomatic. She doesn't have a history of extremely poor nutrition. Thus we find none of the various factors that might lead us

to suspect cirrhosis of the liver. Furthermore, we might have expected a few more physical abnormalities than she demonstrated, although she needn't have had spiders, palmar erythema, Dupuytren's contractures and collateral abdominal veins. We would ordinarily anticipate that the liver-function test, as Mr. Bailey mentioned, would be more seriously deranged, particularly the bromsulphalein dye test. It is certainly true that one can have portal hypertension, splenomegaly and severe cirrhosis of the liver with a normal bromsulphalein test, but such a situation seldom occurs. A major reason why this patient couldn't have had cirrhosis is the surgeon's observation that her liver appeared normal on direct visualization.

Well, if the patient didn't have cirrhosis, the portal obstruction, as Mr. Bailey has pointed out, is most likely to have been "extrahepatic." It could have been "posthepatic"—in the hepatic veins, the so-called Budd-Chiari syndrome. One of the commoner diseases in which we see obstructions in the hepatic veins of adults is a tumor from the kidneys which grows into the renal veins and the inferior vena cava, and then blocks the hepatic veins. If this were present, liver function should have been markedly deranged. Also, there should have been other evidence of this neoplasm, I should think.

The other site of portal obstruction outside the liver is called "prehepatic" or, more usually, "extrahepatic." Again, in the vast majority of extrahepatic obstructions of the portal system, the basic cause is cirrhosis of the liver. Because of the increased portal pressure, thrombi are prone to develop in the portal venous system. Since I don't believe our patient had cirrhosis, however, it is necessary for me to discuss the much less frequent causes. In infants and children, congenital lesions such as cavernous transformation, hypoplasia or stricture of the portal vessels can result in portal hypertension. These situations are not to be suspected in this instance, obviously. In the adult, infection in the portal vein, or around it, such as might result from a perforated peptic ulcer with abscess formation, could cause inflammatory changes and obstruction. Polycythemia, leukemia and blood dyscrasias have been reported in association with portal-vein thrombosis.

When all of these causes have been eliminated, our possibilities are narrowed down to tumors or masses that may be present in the lesser peritoneal sac. Normally, nothing is "in" this space, although under abnormal situations several structures must be considered. I think we can eliminate the stomach, the duodenum and the colon rather promptly, because of the negative x-ray findings. An aneurysm of the abdominal aorta this high up would be quite an unusual finding. An accessory spleen or tuberculous nodes could be in this area, as could a retroperitoneal tumor, a lymphoma or a sarcoma. However, we have no confirmatory evidence to support any of these diagnoses.

Thus I arrive at exactly the spot that Mr. Bailey reached. I am required to decide, on the evidence that has been presented, just what is the most rational diagnosis. I get down to a tumor or mass in the body or tail of the pancreas. It is necessary that this mass obstruct the portal system at a point proximal to where the coronary vein enters, if it is to have caused the esophageal varices. Thus I think that a firm mass observed in a lady of this patient's age must have been in the body or tail of the pancreas. This finding would be entirely consistent, I should think, with a tumor in the pancreas. It could certainly be a cyst. The calcification could go along with this. In this patient's age group, a carcinoma of the body or tail of the pancreas would be my first guess. This tumor probably grew into and obstructed the portal system. It could also account for the mild elevation of the bilirubin by causing partial obstruction to the biliary system. And it could also account for the ascites. The presence of ascites is very troublesome, for portal hypertension *per se* is said not to lead to ascites. Thus, when I threw out the diagnosis of cirrhosis of the liver, I was left without an explanation for the ascites. I can't say that it was caused by the portal hypertension *per se*. I think that a carcinoma of the body or tail of the pancreas could, by metastatic peritoneal spread, have been responsible for the patient's ascites.

It would be my impression, therefore, that this lady died at the age of 75 years from severe, recurrent upper-gastrointestinal hemorrhage due to rupture of esophageal varices, and that these varices were related to portal hypertension. The portal hypertension wasn't due to cirrhosis of the liver, but rather was due to portal-vein obstruction outside the liver, and I should guess that the lesion may have been a carcinoma of the body or the tail of the pancreas.

Dr. D. B. Stone, Internal Medicine: How often do you see neoplastic cells in the ascitic fluid of patients who have neoplasm of the body of the pancreas?

Dr. Eckhardt: We do abdominal paracenteses on many people with abdominal carcinomatosis and ascites, and I should guess that we find tumor cells on cell block in a third of the cases. That would be a broad guess. I wouldn't be disturbed at *not* finding them, but we should certainly look for them, because finding them is most helpful. The surgeons or the pathologists can probably answer the question more intelligently than I.

Dr. Ian Maclean Smith, Internal Medicine: Is it correct that after a good bleed from esophageal varices, ascites may follow?* It might not have to be a bleed resulting from an intrahepatic obstruction. It could be a bleed from a blockage of the extrahepatic portal system.

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* Ratnoff, O. D., Conley, C. L., and Berthrong, M.: Differentiation between extrahepatic and intrahepatic obstruction of portal circulation; clinical study of "Banti syndrome." BULL. JOHNS HOPKINS HOSP., 87:305-327, (Oct.) 1950.

Dr. Eckhardt: I presume that in anybody who is very debilitated, this would be a possibility. I suppose we might find a benign lesion and have no explanation for this lady's ascites, but I can't think of any reason why that would occur.

Dr. Paul M. Seebohm, Internal Medicine: Do you think this lady could have lost enough blood and plasma so that blood loss, together with the portal hypertension, could have accounted for the ascites? In other words, would hypoproteinemia secondary to hemorrhage, plus portal hypertension, produce ascites in the same way that hypoproteinemia plus increased portal pressure causes ascites in liver disease?

Dr. Eckhardt: This is possible. When the patient came in, however, her serum albumin concentration was a bit over 3 Gm. She may well have been dehydrated, of course, but her level of serum albumin certainly wasn't low. The factors responsible for ascites are many and varied. We don't know all of them precisely, but portal hypertension, hypoalbuminemia, and increased aldosterone and antidiuretic hormone activity are potent ones. I assume that an elderly person who has lost some of her blood plasma proteins and has portal hypertension might develop ascites. I suppose that if the pathologist tells us that she had a benign lesion and didn't have cirrhosis, we will have to invoke this sort of explanation, but it doesn't fit too well.

Dr. John A. Gius, Surgery: I should like to ask whether the fact that bleeding continued when the balloon was in place suggested an extraesophageal source of hemorrhage.

Dr. Eckhardt: As I understand it, you are asking how reliable these Sengstaken-Blakemore tubes are, and whether they are of assistance in the differential diagnosis. Occasionally we pass this tube when we are in doubt as to the site of the bleeding. If we think the tube is well-positioned and if we continue to draw blood back from the lumen of the stomach, the possibility that we are dealing with bleeding from gastritis or ulcer is strengthened. However, the fact that this lady continued to bleed even with the tube in place certainly does not rule out bleeding from varices. We know, for instance, that the plexus of vessels is not limited to the lower end of the esophagus, though it is rather extensive there as Dr. Gillies has demonstrated. Varices also occur in the upper portion of the stomach, and this area certainly can bleed as well. We know that if the Sengstaken tube remains in place too long, or with too much pressure, erosion may occur. It is also hard to position the tube, and it has been my misfortune to see a number of individuals with esophageal varices in whom we felt that the tube was well-positioned, but the bleeding continued. At times, this tube works wonders, but at other times, frankly, it is very disappointing.

There are some individuals who prefer a double-lumen rather than a triple-lumen tube. In the double-lumen type, the sausage-shaped esophageal balloon is eliminated, and thus the likelihood of pressure necrosis to the lower end of the esophagus is decreased. Regardless of the type of tube employed, the general tendency today is to leave the tube in place for shorter and shorter periods of time because of the damage that can result.

Dr. Mason: I wonder whether I could ask Dr. Gillies a question, and then ask Dr. Eckhardt whether he wants to change his diagnosis. Dr. Gillies, you wrote a paper once about calcification in hypernephroma. How often does it occur, and is the calcification in your x-ray of this patient consistent with what you see in hypernephromas?

Dr. Gillies: I should say that the calcification observed in this patient is not the type one would expect to find in a hypernephroma. Of course it could be possible, but it would not be characteristic of the usual hypernephroma.

Dr. Eckhardt: I certainly wouldn't wish to change my diagnosis. I don't mind at all if I am shown to be wrong, for that is the way we all learn. I think we must go on what facts we have. The mass described in this patient doesn't seem to be the usual carcinoma of the kidney, although I suppose it could be. The entire picture presented at this CPC would be a little difficult for me to explain, rationally, on the basis of carcinoma of the kidney. Although such a lesion might obstruct the splenic vein and cause splenic hypertension, our problem today is that of esophageal varices. Thus, the obstructing lesion must be in the portal system before the entrance of the coronary or left gastric vein, and a carcinoma of the kidney would be less likely to cause this obstruction than would a lesion of the pancreas.

I should explain the calcification seen on x-ray as due to arteriosclerotic changes in the splenic vessels. That sort of thing wouldn't be too unusual in a lady of her age, although portal hypertension —particularly one of long standing—would be a contributory factor.

Dr. George R. Zimmerman, Pathology: The basic lesion was a benign neoplasm of the pancreas. It measured 30 x 15 x 15 cm., and had replaced the pancreas except for a small portion of the pancreatic head. The neoplasm had encircled the common bile duct and compressed it. It had encircled and compressed the superior mesenteric and splenic veins. There was a recent thrombus occluding the stenotic segment of the superior mesenteric vein. The neoplasm had pushed the spleen upward, and had partly encircled, but not invaded, the left adrenal gland.

There were esophageal varices. One of these had recently ruptured, and an estimated 600 ml. of blood was found in the stomach, small bowel and large bowel. A dilated short gastric vein formed an anastomosis between the splenic vein and the esophageal plexus. Dilated anastomotic veins were demonstrated also between the esophageal plexus and the azygos venous system.

The superficial layers of the abdominal-wall wound contained a small amount of pus. There was generalized peritonitis, with loculation of purulent fluid under the right leaf of the diaphragm, in the pelvis and in the right iliac fossa. The spleen contained a subcapsular abscess. The intestines were lightly bound together by fibrinous adhesions, the fibrin being mixed with a little purulent exudate. Hemolytic streptococci, nonhemolytic streptococci and Escherichia coli were cultured from peritoneal fluid. Some of the fluid in the abdomen was probably transudate, and some of it the exudate of peritonitis.

Incidental findings include cholecystitis and cholecystolithiasis. There was moderate generalized atherosclerosis throughout the parts of the body that were examined. The central nervous system had been excluded from the examination. A segment of the anterior descending branch of the left coronary artery was almost completely occluded by atherosclerotic plaques, and the lumen was described as being the size of a thread. No myocardial infarction, either old or recent, could be demonstrated.

The surface of the tumor of the pancreas was bosselated. It consisted of variously sized nodules and cysts measuring up to 2 cm. in diameter, which were held together by densely collagenized fibrous septae of variable thicknesses. The cysts contained mucoserous or mucinous fluid. The nodules consisted of soft, tan, friable, semitranslucent tissue. In some instances, the stromal interstices were filled partly with tissue and partly with fluid. Portions of the tumor were hemorrhagic, other portions were infarcted, and there were areas of scarring representing the end stage of infarction or hemorrhage.

Microscopically, the neoplasm was separated from pancreas by a dense, fibrous capsule containing islets of Langerhans or remnants of islands. The thick capsule indicated that the tumor grew slowly and wasn't highly infiltrative. The walls of the encircled common bile duct, the walls of the encircled large veins, and the adrenal gland substance had not been invaded by the tumor. In other sections, however, there were microscopic extensions of tumor tissue into the adventitiae of large vessels, proving that the tumor did have the capacity to invade, but that this capacity was of a low order. There was no demonstrable permeation of lymphatics or vascular lumens in the many sections of tumor.

Microscopic sections from the best-preserved, most nearly solid areas of the tumor showed a multicystic structure. The cysts had thin, fibrous

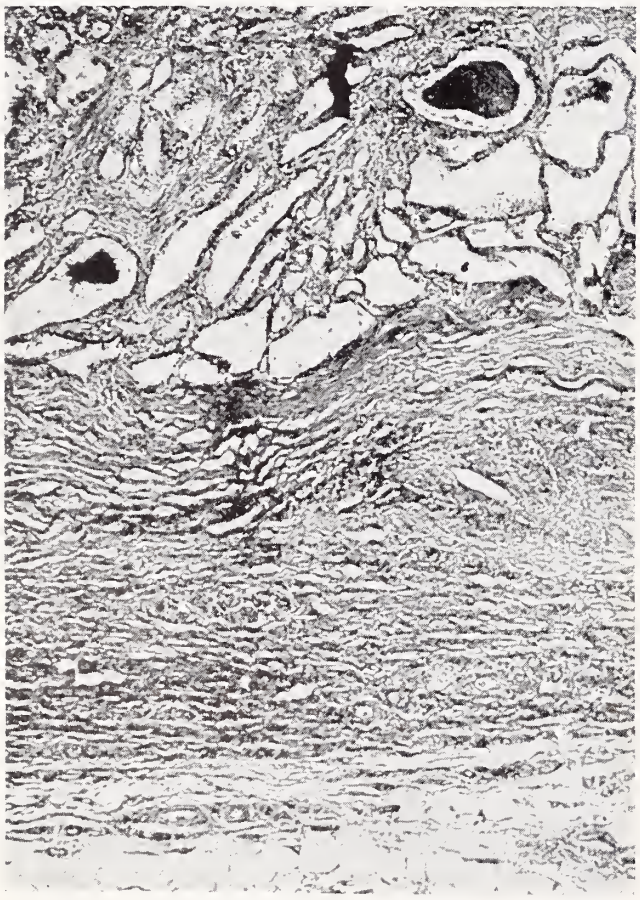


Figure 1. Photomicrograph (about 100x) of the tumor margin, showing the dense capsule surrounding the neoplasm and a cystic adenomatous area (top) representative of most parts of the tumor.

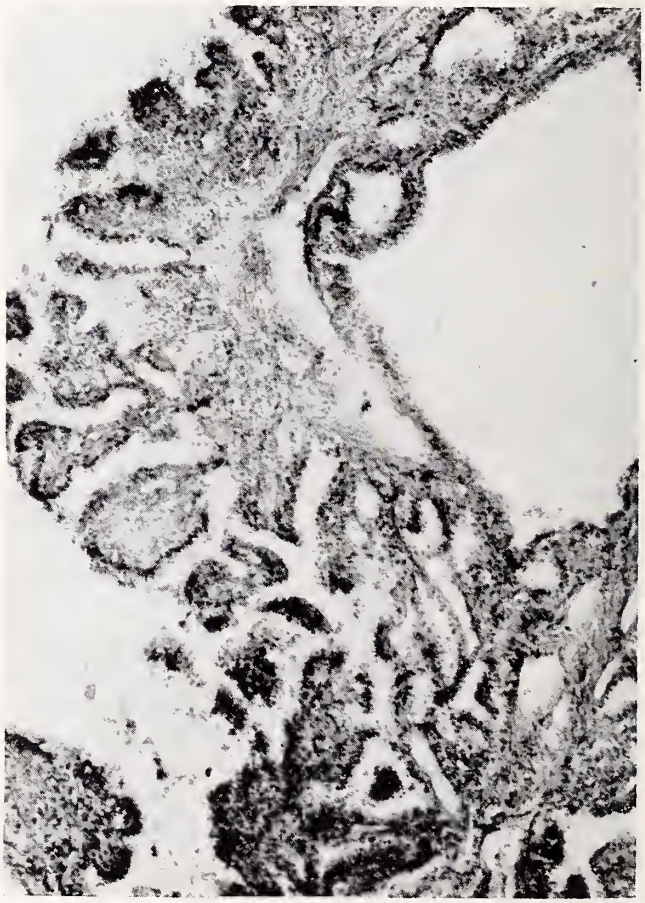


Figure 2. A portion of the tumor, with papillation of the epithelium lining the cysts of the adenoma. (Magnification: about 450x.)

septae and were lined by epithelium which ranged in height from low columnar to flat, almost endothelial cells. The taller cells had basilar, round, regular nuclei, and clear, sometimes vacuolated cytoplasm. In most sections the epithelium was arranged in a single layer, and the cyst lining was smooth. In a few areas the tumor was papillated. The papillae were covered by a single layer of epithelium, and had ordinary, fibrovascular cores. Except for variations in height, the epithelial cells were uniform in appearance. There were no mitoses or other signs of rapid proliferation.

The areas of hemorrhage and infarction were variable in age. Some were very recent. In the older scarred and hyalinized areas, there were foci of calcification as reported in the interpretation of the x-ray films.

The nature of the peritoneal reaction was consistent with peritonitis which had had its onset following surgery.

Microscopic sections of the esophagus showed extensive varices. Sections of gallbladder and of the anterior descending branch of coronary artery had the usual features of cholecystitis and atherosclerosis. There was no myocardial fibrosis.

The sequence of events in this woman's illness was fairly clear. The pancreatic tumor compressed the superior mesenteric and splenic vein, producing hypertension of this part of the portal system. This phenomenon led to esophageal varices and bleeding, and finally to death from blood-loss and peritonitis.

I have no explanation for the ascites, other than the speculation that has already been offered.

Student: Was there a history of diarrhea or pancreatic discomfort?

Dr. Zimmerman: No, there was no such history.

Dr. Stone: Did the urine contain sugar?

Dr. Zimmerman: No.

Dr. Henry E. Hamilton, Internal Medicine: What is the frequency of this lesion?

Dr. Zimmerman: There are relevant reports in the literature, but this tumor is so infrequent that available statistics are almost meaningless, except that they indicate the rarity of the neoplasm.

Dr. Gius: Was the enlargement of the spleen simply a result of congestion?

Dr. Zimmerman: Yes, the spleen was enlarged from congestion. It showed a suggestion of fibrosis of the pulp, but there was very little of it, if any.

Dr. R. F. Sheets, Internal Medicine: How much ascitic fluid was there?

Dr. Zimmerman: At the time of autopsy, it was estimated at 1000 ml., but I don't know how much was exudate and how much was transudate.

Dr. Hamilton: Perhaps Dr. Eckhardt will revise his dictum that ascites doesn't occur in portal-vein hypertension. It seems to me we have a classical example here of pure portal-vein hypertension with ascites.

Dr. Eckhardt: I am in complete agreement that we must keep our minds open and alert. When new data warrant discarding or revising old dicta, we should be flexible enough to do so.

SUMMARY OF NECROPSY FINDINGS

The primary disease was a neoplasm, 30 x 15 x 15 cm. in size, which had replaced about 80 per cent of the pancreas, leaving some normal pancreatic tissue in the region of the head. The neoplasm consisted of numerous cysts, up to 1.5 cm. in size, separated by fibrous septae. The cysts were lined by flattened, cuboidal and columnar epithelium, which was papillated in places and which secreted a mucinous fluid. There were areas of necrosis and old scarring. The splenic and superior mesenteric veins and common bile duct were encircled by the mass, the spleen was pushed upward, and the left adrenal was partly surrounded. None of these structures had been invaded by neoplastic cells. A thrombus occluded the superior mesenteric vein. There were no metastases.

There were venous anastomoses of the short gastric and azygos veins with the esophageal veins, and there were many esophageal varices. One of these had perforated. About 600 cc. of blood was found in the stomach and small and large intestine.

The superficial layers of the abdominal wound contained pus, and there was widespread peritonitis with loculation of purulent fluid, especially in the right subdiaphragmatic space, over the spleen, in the pelvis and in the right iliac fossa. The intestines were lightly bound by fibrinous adhesions admixed with a little purulent exudate. Beta hemolytic streptococci, non-hemolytic streptococci and E. coli were grown from these exudates. There was also a 2 cm. subcapsular abscess of the spleen.

The gallbladder contained six mixed-type stones, and the gallbladder wall was chronically inflamed.

There was atherosclerosis, generalized and moderate in degree, except in the proximal segment of the anterior descending branch of the left coronary artery. The lumen in this segment was reduced to the diameter of a thread. No myocardial infarcts, recent or old, could be demonstrated.

There was no hepatic cirrhosis. There was no appreciable fibrosis of the splenic pulp.

Death is attributed chiefly to a combination of peritonitis and blood loss from ruptured esophageal varices.

ANATOMIC DIAGNOSES

Cystadenoma of the pancreas

Compression of the splenic and superior mesenteric veins, due to the above

Thrombosis of the superior mesenteric vein, due to the above

Esophageal varices, with rupture and hemorrhage

Atherosclerosis, generalized

Cholecystitis, chronic, with cholecystolithiasis.

Coming Meetings

In State

Feb. 21-24 **Refresher Course for the General Practitioner.** Iowa City

April 7-8 **Raymond Blank Memorial Hospital Association Pediatric Conference.** Younker Memorial Rehabilitation Center, Iowa Methodist Hospital, Des Moines

Out of State

Feb. 2-3 **California Medical Association Postgraduate Institute.** El Mirador Hotel, Palm Springs

Feb. 5-7 **Annual Congress on Medical Education and Licensure (Council on Medical Education and Hospitals of the AMA).** Palmer House, Chicago

February 6 **Seventeenth Annual Meeting of the American Academy of Allergy.** Statler-Hilton Hotel, Washington, D. C.

Feb. 6-7 **Electrocardiology, Course 1.** University of Nebraska College of Medicine, Omaha

Feb. 6-8 **Anesthesiology for Specialists.** Center for Continuation Study. University of Minnesota, Minneapolis

Feb. 7-8 **Institute for Metabolic Research.** Highland-Alameda County Hospital, Oakland

Feb. 8-10 **Fifth Illinois Congress of the Illinois Committee on Maternal and Infant Health.** St. Nicholas Hotel, Springfield, Illinois

Feb. 9-11 **Surgery for Surgeons.** Center for Continuation Study, University of Minnesota, Minneapolis

Feb. 11 **Dermatologic Therapy.** Presbyterian Medical Center, San Francisco

Feb. 11-13 **A Course in Pediatrics.** University of California at San Francisco

Feb. 13-14 **Hypertension.** University of Kansas Medical Center, Kansas City

Feb. 13-17 **Obstetrical and Gynecological Assembly of Southern California.** Ambassador Hotel, Los Angeles

Feb. 13-17 **Annual Armed Forces Institute of Pathology Lectures.** Armed Forces Institute of Pathology, Washington, D. C.

Feb. 13-18 **Neurology for General Physicians and Internists.** Center for Continuation Study, University of Minnesota, Minneapolis

Feb. 16 **Mother and Child (Fourth in a series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City

Feb. 17-18 **The Skin: A Law-Medicine Problem (The Law-Medicine Center of Western Reserve University).** Western Reserve University, Cleveland

Feb. 18-19 **Office Surgery.** University of California at Los Angeles

Feb. 19-22 **California Tuberculosis and Health Association and California Trudeau Society Annual Joint Meeting.** Jack Tar Hotel, San Francisco

Feb. 20-22 **Radiology and Radioactive Isotopes.** University of Kansas Medical Center, Kansas City

Feb. 20-24 **Medicine for General Practitioners (University of California at San Francisco).** Mount Zion Hospital, San Francisco

Feb. 20-24 **Selected Topics in Internal Medicine (American College of Physicians).** University of Oklahoma School of Medicine and University Hospitals, Oklahoma City, Oklahoma

Feb. 20-Mar. 3 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago

Feb. 21 **New Pulmonary Syndromes (Fourth in the series "General Medicine and Surgery").** The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas

Feb. 21 **School Problems of the Adolescent (Sixth in the series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri

Feb. 23-24 **Sioux Valley Medical Association.** Sheraton-Cataract Hotel, Sioux Falls, South Dakota

Feb. 23-25 **Fifteenth Annual Symposium on Fundamental Cancer Research.** M. D. Anderson Hospital Auditorium, Houston, Texas

Feb. 24-26 **Fractures.** University of California at Los Angeles

Feb. 25 **Diabetes and Thyroid Disease.** Presbyterian Medical Center, San Francisco

Feb. 25-26 **Clinical Hematology.** University of Southern California, Los Angeles

Feb. 27-Mar. 1 **Pediatrics for General Physicians and Specialists.** Center for Continuation Study, University of Minnesota

Feb. 28-Mar. 3 **Annual Clinical Conference, Chicago Medical Society.** Palmer House, Chicago

Mar. 2 **Second Low-Beer Memorial Lecture.** University of California School of Medicine, Auditorium—S, Medical Sciences Building, San Francisco

Mar. 2-3 **California Medical Association Postgraduate Institutes—1961 (West Coast Counties in Cooperation With College of Medical Evangelists).** Del Monte Lodge, Pebble Beach

Mar. 2-3 **Retinal Surgery.** University of California at Los Angeles

Mar. 2-4 **Pediatric Neurology.** University of California at San Francisco

Mar. 6-8 **Pediatrics.** University of Kansas Medical Center, Kansas City

Mar. 6-9 **Sectional Meeting for Surgeons and Graduate Nurses (American College of Surgeons).** Hotels Bellevue-Stratford, Ben Franklin, and Sylvania, Philadelphia

Mar. 6-9 **Twenty-Fourth Annual Meeting of the New Orleans Graduate Medical Assembly.** The Roosevelt Hotel, New Orleans

Mar. 6-10 **Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago

Mar. 6-11 **Surgery of the Hand.** New York University Medical Center, New York City

Mar. 6-17 **Board of Surgery Review, Part II.** Cook County Graduate School of Medicine, Chicago

Mar. 6-17 **Fractures & Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago

Mar. 7-8 **Southwestern Pediatric Society Postgraduate Lecture Series.** Statler Hotel, Los Angeles

Mar. 7-9 **Management of Pain by Therapeutic Nerve Block.** University of California at Los Angeles

Mar. 8-10 **Conference on Keratoplasty.** Presbyterian Medical Center, San Francisco

Mar. 9-11 **Urology.** University of California, San Francisco

Mar. 10-11 **Psychiatry in Medicine.** University of California at Los Angeles

Mar. 10-12 **Annual Meeting, American Society of Psychosomatic Dentistry and Medicine.** Shoreham Hotel, Washington, D. C.

Mar. 11 **Perinatal Problems (Univ. of California, San Francisco).** Children's Hospital, Los Angeles

(Continued on page 101)

Editorials

IOWA INTERPROFESSIONAL ASSOCIATION

Today we live in a most complex society, one in which the individual is held to be supreme but, paradoxically, one in which the individual is seldom able to accomplish a great deal on his own, without the aid of others. What then, is more natural than close cooperation by several professional associations having common aims and desiring to further those purposes?

In the middle 1930's, the Iowa State Medical Society, the Iowa Dental Association, the Iowa Veterinary Medical Association, the Iowa Pharmaceutical Association, and the Iowa Nurses Association joined hands to form the Iowa Interprofessional Association. The Iowa Hospital Association was welcomed to the organization in 1949. Obviously, these groups have common problems, common objectives and an interdependence upon each other.

The organizational structure of the IIA is similar to those of its members. It is financed by annual dues, ranging from $100 to $150, depending on the organization. Each member group elects three delegates and three alternates, who constitute the legislative and business body of the IIA. In addition, the secretary or executive secretary of each component association is a delegate, with the right to vote.

Executive authority is vested in the Executive Council, which consists of one representative from each member organization, as well as duly elected officers—the president, president-elect, vice-president, and secretary-treasurer. This group meets as often as circumstances warrant which, in the past, has been at least quarterly. An annual meeting is held sometime during the first three weeks in September, and, if necessary, an interim meeting is also scheduled.

The IIA was formed for the following purposes: To promote, extend, elevate and advance health conditions, health education, medical science and medical knowledge, in the State of Iowa, by joining together professional groups for scientific purposes; to provide a clearing house for the interchange of information respecting the plans and methods of organization developed by the various member groups; to act as a bureau of research and information to study and report on various civic problems in the solution of which the technical knowledge of professional people is of value; to educate the public with respect to the aims of the member professions and the value of high-grade professional service; to cooperate in securing and maintaining legal and ethical standards of character and education requisite to the rendering of high-grade professional service; to cooperate with the proper legal authorities in the enforcement of professional laws; to cooperate in promoting plans for the advancement of the material welfare of the member organizations; and to encourage the achievement of these objectives at the local level.

Even when the IIA was formed, there were individuals and groups that favored the socialization of medical care in this country. Hence, one of the motivating factors that gave impetus to the establishment of the organization was the desire to halt the ever-increasing trend toward socialization of the health professions. Observing the progress of socialism in the health fields in other countries caused concern, for where socialization had taken place, the quality of patient care had deteriorated and the health groups had been downgraded.

Consistent with its purposes and objectives, including its interest in having medical care provided outside of government control, the IIA undertakes one or more major projects each year. Last year it worked on Civil Defense and the development of community plans for taking care of the injured in event of a catastrophe. This year's plan envisages a program to encourage junior and senior high school students to enter the health professions; the formation of county-level Interprofessional Associations; and an over-all study of health care for the aged, with particular emphasis on nursing homes and home-care problems.

In addition to these public service projects, the IIA also concerns itself with important legislative matters. Every two years, when the legislature meets, much time and effort is spent by individual groups, as well as by the IIA, to promote passage of good health legislation, and to defeat proposals that would be detrimental to the public.

It is obvious that six strong and active organizations banded together can exercise six times as much strength in promoting better care for the patient.

PRECEPTOR ENROLLMENTS

Preceptor enrollment blanks were mailed to county medical society secretaries in mid-December. Thus far, they are being filled in and returned only very slowly.

Each physician is urged, if he can arrange to take a student next summer, to get a form from his county society secretary, complete it and mail it to State Medical Society headquarters as promptly as possible.

SMOKING AND LUNG CANCER

Our forefathers conquered the geographical frontiers and laid before us arable lands, travelways and natural wealth. In addition, however, they made us pioneers in a broader type of environmental control. To survive, we must cope with increasing worldwide urbanization and with social, economic and other conflicting pressures. And if we are to make the most of our opportunities, we must utilize orderly thinking, scientific deeds and education.

We must pioneer! Our population has doubled in the first 60 years of this century, and it is likely to double again the next 10 years as the century is completed. Slowly we must achieve environmental control of our polluted streams and waters and must prevent atmospheric contamination by radiation and fossil-fuel wastes. We hope that through education and study we can see to it that our progeny will not suffer through errors of the past.

One of our cherished social mores is the use of the pleasurable botanical, tobacco. This was introduced into western European culture in the midportion of the Sixteenth Century, became a staple crop in Jamestown in about 1615, and has remained such. Roughly, the revenues accruing to the growers and to the tobacco industry together equal the excise taxes collected by the Internal Revenue Service, and the latter collects over 1.6 billion dollars annually.

It is unlikely that the use of tobacco may be legislatively denied. But as our forefathers pioneered for us, so must we also blaze a trail for our children. Orderly thinking certainly cannot justify cigarette smoking as beneficial, and it may actually be an important threat to health. The 700 to 1,000 per cent increase in pulmonary cancer in a generation has many aspects of an epidemic, and even while manuscripts may suggest that bronchial carcinoma is merely a replacement, diseasewise, for tuberculosis, in susceptible individuals, many data point toward a disproportionately high incidence of lung cancer among cigarette smokers. What matters it if *all* the increase in lung cancer is not due to smoking? Bronchial carcinoma has burst into prominence—not by the affliction of notables but by numerical weight. In the United States there were 32,000 deaths from this cause in 1959! And does it really matter if only some of the vascular diseases may be laid at the door of tobacco? Through average longevity has been stretched past 70 years, an individual isn't benefited if he is struck down two decades sooner in the peak of his productivity.

As physicians, let us deny, if we must, that cigarettes will harm you or me as individuals, but in the light of the firm evidence, let our thinking be sufficiently orderly to permit our agreeing that smoking can harm the bronchial epithelium and the vasculature of our youth—and let us tell them so!

R. C. H.

PHYSICIANS' POTENTIAL ADVANCED BY AUTOMATION

Advances in medical technology put machines and instruments to work at an unprecedented rate during 1960 to serve mankind. Modern technology is a force which brings together machinery and equipment, skills and techniques, men, money, and methods, and how far it will go in 1961 and years thereafter, no one can predict.

Dr. E. Vincent Askey, Los Angeles, president of the American Medical Association, said that "in clinics, hospitals, and research centers throughout the country medical technology and its twin, automation, are presently helping to save not only hand and muscle energy, but mental energy as well. "From the work taken over by new machines, instruments, and complex devices, especially during 1960, the future of automation in medicine looks bright," he added. "Everything in this field is designed to help the sick in some way, and prolong life."

Technology already has extended the range of a physician's vision to vistas undreamed of only a few years ago. Man's ear, for example, once heard little beyond the cry of birds. Recent engineering developments to medical research and clinical diagnosis make it possible to record data within and beyond human sensory capabilities by lightweight sensing, measuring, timing, amplifying, and transmitting devices. Much of the heart sound data useful for diagnostic purposes lies below the frequency range and intensity detectable by the human ear, but today new measuring devices can easily detect these frequencies.

Engineering developments and techniques that became available for medical application in one way or another during 1960 included:

—Development of a simple, eight-part stapling device that enables the surgeon to connect severed blood vessels rapidly with stainless steel staples.

—An apparatus, dubbed the "kidney cooler," which refrigerates and preserves human kidneys during surgery on those organs. The kidney function, which deteriorates rapidly at normal temperature when blood supply is interrupted, is thus preserved until circulation is restored. In clinical tests the kidney cooler allowed at least twice the amount of time formerly required to perform an operation. It reduced the blood loss and the amount of blood present in the area of the operation.

—A heart-lung machine that automatically holds blood flow to rates desired in open-heart surgery.

—A system of x-ray fluoroscopy which utilizes the television image tube to deliver a fluoroscopic

image of brightness up to 1,000 times greater than currently obtained and which drastically reduces the amount of radiation exposure to the patient. The new method enables entire teams of consulting physicians to view the diagnostic x-ray images in a normally-lighted room through a device that resembles a console-model television set.

—A Japanese camera that photographs the inside of the human stomach. The camera, the size of the tip of an index finger, can photograph ulcers, gastritis and stomach cancers, and can help in establishing more accurate diagnoses of stomach disorders.

—A device that accurately controls the rate and flow of certain fluids, blood, and drugs. It delivers precisely-measured quantities of fluid over specific time periods and is especially appropriate in administering medication to infants, old people, and the seriously ill.

—A new psychiatric study device that permits up to 200 medical students to observe interviews with neurotic and psychotic patients on a closed-circuit television system. It is considered superior to the use of the conventional one-way viewing mirror. Students, seated in a well-ventilated and softly lighted conference room, have the benefit of two-way participation and note-taking during the interview.

—An electronic digital computer that assists in the search and correlation of larger quantities of clinical data. The process permits the recording and storage of medical data ranging from the most precise laboratory values to the informative impressions of the physician as well as all supplementary laboratory data concerning the patient.

—A unique monitoring device, made up of a number of specially adapted standard diagnostic instruments, helps physicians tide acutely ill patients over crises. A battery of instruments on a specially equipped unit makes it possible simultaneously to monitor changes in blood chemistry, fluid balances, blood pressure, and other suddenly occurring chemical and physiologic events that demand immediate recognition and correction.

—A highly sensitive, automatic detector that can be moved over the entire body of a patient to map and measure the distribution of gamma-emitting isotopes in bone. This is a valuable aid in early diagnosis of some forms of bone cancers.

—An artificial kidney that perfuses a patient's blood through a column of synthetic resin, and selectively removes potassium, ammonium, calcium, and magnesium more swiftly than is possible with standard devices now in use.

—An eye-camera device, fitted into a helmet, that records precisely the area where a patient's eyes are focused. It is a valuable aid not only for studying certain visual defects, but is also used for studying the focusing patterns of automobile drivers and students in studies designed to reveal how their visual alertness might be improved.

—An electronic device called an accelerometer is being used as an aid in the diagnosis and treatment of Parkinson's disease. Taped to one of the patient's extremities, it can test the amount of tremor present. Combined with other instruments, it can provide a permanent, accurate, objective record of the disease's onset, development, and regression, to supplement a physician's observations.

—A technic, using radioactivity and a detector similar to a Geiger counter, has been perfected to measure the coronary blood flow through a patient's heart. When applied to the chest wall over the heart, it will allow physicians to identify hearts diseased with coronary artery arteriosclerosis before a heart attack. Present methods diagnose this type of disease only after the heart has suffered permanent damage.

—An electronic computer can determine cardiac energy norms for the first time and provide new guides to safe activity levels for heart patients. It provides a means of immediately and continually recording the simultaneous oxygen consumption, respiration rate, blood pressure, heart rate, and expired carbon dioxide of a person in various degrees of activity.

—A fluorescent microscope designed to help the physician make accurate diagnoses of certain communicable diseases within minutes after the patient comes to his office. Most promising for the near future is its effective use in three situations where it fills important needs: tagging of rabies in animals, the reliable diagnosis of syphilis, and the quick detection of streptococci from throat swabs, thus providing opportunity for rheumatic fever prevention.

—A method of instantaneously recording the time taken for blood to circulate between the carotid artery in the neck and a number of points in the brain. It thus provides an improved approach to the diagnosis and surgical treatment of several common diseases of the brain and its blood vessels.

—A device which records the electrocardiogram of the fetus prior to and during delivery. Any change in the heart rate of the fetus during delivery can warn the attending physician to protect the unborn child from oxygen deprivation.

Please Mark Your Calendar
ISMS ANNUAL MEETING
April 23-26, 1961
Veterans Memorial Auditorium
Des Moines

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

DRUGS IN CURRENT USE, 1961, ed. by *Walter Modell*, M.D. (New York, Springer Publishing Company, Inc., 1960. $2.25).

HEMIPOIESIS: CELL PRODUCTION AND ITS REGULATION (A CIBA FOUNDATION SYMPOSIUM), ed. by *G.E.W. Wolstenholme*, O.B.E., MA., M.B., M.R.C.P., and *Maeve O'Connor*, B.A. (Boston, Little, Brown and Company, 1960. $11.00).

CLINICOPATHOLOGICAL CONFERENCES OF THE MASSACHUSETTS GENERAL HOSPITAL: SELECTED MEDICAL CASES, ed. by *Benjamin Castleman*, M.D., and *H. Robert Dudley, Jr.*, M.D. (Boston, Little, Brown and Company, 1960. $12.50).

BOOK REVIEWS

Blood Diseases of Infancy and Childhood, by *Carl H. Smith*, M.A., M.D. (St. Louis, C. V. Mosby Company, 1960. $17.00).

This new medical textbook represents a very well documented consideration of the blood diseases seen in infants and children. Several chapters are deserving of special mention.

The author has discussed the differential diagnosis of jaundice in the newborn in a very complete and satisfying manner. The discussion is enhanced by the very adequate bibliography that accompanies it.

Two chapters are concerned with the problem of erythroblastosis fetalis—the first of them presenting the general considerations, and the second presenting treatment. The chapter on treatment is especially complete and authoritative.

The illustrations and tabular presentations add much to the book. References have been generously provided. The book is a valuable addition to the pediatrics literature.—*M. E. Alberts*, M.D.

Fundamentals of Chest Roentgenology, by *Benjamin Felson*, M.D. (Philadelphia, W. B. Saunders Company, 1960. $10.00).

This excellent presentation of the roentgenology of chest diseases is recorded in the interesting and personable style for which Dr. Felson has become well known. Many of the points made are familiar to radiologists, for these have been presented in refresher courses that Dr. Felson has given for several years at the national radiology meetings. In the introduction, he states, "It is by no means a complete dissertation on the subject, but reflects chiefly my own interests and experience."

The contents are divided among the various systems of the lower respiratory tract. Practical explanations of the many different kinds of signs that occur on the chest x-ray and their use in making as exact a diagnosis as possible are an important part of this book.

I feel that this book presents a practical approach to the problems of chest diagnosis. It will be read with interest by radiologists who may be familiar with many of these signs but who will find help in the unique organization which Dr. Felson has given to them. Other physicians who are interested in chest diseases should also find value in the text. The book is profusely illustrated with excellent reproductions of roentgenograms of very good quality.—*James T. McMillan*, M.D.

Office Diagnosis, by *Paul Williamson*, M.D. (Philadelphia, W. B. Saunders Company, 1960. $12.50).

This book is a single-handed effort by a generalist to simplify the common problems in office diagnosis for the busy practitioner. The illustrations have been done by his wife, who learned how to draw while producing the book. It is replete with drawings that illustrate his pet theories.

He does have some interesting ideas about the psychological approach to patients and the determination of their "anxiety level." However, almost every entity that I have reviewed is covered in a superficial manner, and all too often one finds the statement, "We don't understand why this is," in his conclusions. The laboratory diagnosis is limited to that which one would have available in a rural office, but there are exceptions. The electrocardiograms, for the most part, appear to have been drawn or diagrammed, rather than to be photographic copies of actual tracings. In many instances they do not show the condition intended, or they show it so poorly that the illustration is valueless.

This book has a very witty introduction in which the author say it represents "what I think and what I do." He states, "If the book stimulates your thinking about diagnosis to the point where you decide why I am wrong about so many things, much has been achieved. Then you are, yourself, a better diagnostician, and that is the goal we pursue."

Needless to say, I do not think this book is authoritative enough to warrant this type of labor.—*Charles H. Gutenkauf*, M.D.

Infectious Diseases of Children, Second Edition, by *Saul Krugman, M.D.*, and *Robert Ward*, M.D. (St. Louis, C. V. Mosby Company, 1960. $13.00).

Only two years have elapsed since the first edition of this excellent textbook appeared, yet a great deal of revision has been necessary, primarily because of the advancements that have taken place in virology. The text has been enlarged by over 50 pages, and there has been an appropriate increase in the numbers of figures and illustrations.

Several major changes deserve comment. The chapter dealing with enteroviral infections considers poliomyelitis, and Coxsackie and ECHO viruses in their natural relationships to each other. This excellent chapter replaces the previously separated considerations of these viral diseases. A separate chapter considers in more detail the problem of aseptic meningitis, which in some instances may be caused by this same group of viruses.

Acute respiratory infections are considered in a separate chapter, and there is an excellently concise review of this ever-present problem in children. The classification of these diseases is presented in a practical and most informative fashion.

A completely new chapter concerns the problem of rabies. The first edition did not take up this disease. The approach made to this problem may help the practicing physician in solving the often perplexing dilemma of whether to initiate an anti-rabies vaccine regimen.

Drs. Krugman and Ward have indeed provided an excellent textbook. It will serve as a valuable reference for any physician who treats children. The presentation is concise and systematic. The chapter headings are arranged in alphabetical order to facilitate easy access to the material sought. This is truly an excellent book.—*M. E. Alberts,* M.D.

A TEXTBOOK OF MEDICINE, TENTH EDITION, ed. by *Russell L. Cecil,* M.D., and *Robert F. Loeb,* M.D. (Philadelphia, W. B. Saunders Company, 1959. $16.50).

As were its predecessors, this is a beautifully organized, clear and fairly complete description of the majority of disease states that fall into the province of internal medicine. Numerous viral diseases are taken up for the first time, in this edition, along with silo filler's disease, high altitude sickness, various metabolic abnormalities, the carcinoid syndrome, electrolyte and endocrine disturbances, hepatic coma, fibrocystic disease, cryoglobulinemia and macroglobulinemia, cervical spondylosis, Tietze's syndrome, Marfan's syndrome, benign intracranial hypertension and electric shock treatment in psychiatric therapy.

Although many of these topics are described more completely in other treatises, the coverage in this text will suffice in most instances. A new and clearer type and the double-columned pages make for easy reading.—*Charles H. Gutenkauf,* M.D.

It's your professional privilege to replenish your ranks . . .

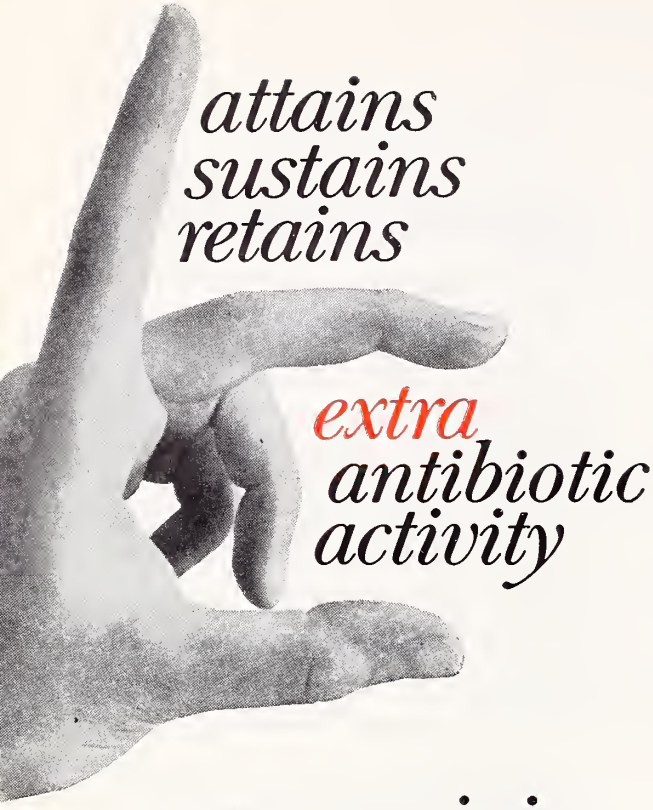
Give to medical education through AMEF

American Medical Education Foundation
535 N. Dearborn St., Chicago 10, Ill.

Coming Meetings

(Continued from page 96)

Mar. 11-12	**Anesthesia Section of Los Angeles County Medical Association 6th Annual Spring Postgraduate Meeting.** Statler Hilton Hotel, Los Angeles
Mar. 12-16	**29th Annual Alumni Postgraduate Medical Convention of the College of Medical Evangelists.** Ambassador Hotel and White Memorial Hospital, Los Angeles
Mar. 12-17	**American College of Allergists Graduate Instructional Course and Seventeenth Annual Congress.** Statler Hilton Hotel, Dallas
Mar. 13	**What's New in Orthopedics.** University of Kansas Medical Center, Kansas City
Mar. 13-15	**Allergy for General Physicians and Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 13-17	**Advances in Medicine.** Cook County Graduate School of Medicine, Chicago
Mar. 13-24	**Obstetrics, General & Surgical.** Cook County Graduate School of Medicine, Chicago
Mar. 13-25	**Course in Laryngology and Bronchoesophagology.** Department of Otolaryngology, University of Illinois College of Medicine, Chicago
Mar. 15-19	**Diagnostic Radiology.** University of California, San Francisco
Mar. 16	**The Kidney (Fifth in the series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City
Mar. 16-17	**Gastroenterology.** University of Nebraska College of Medicine, Omaha
Mar. 16-18	**General Review Course for Practicing Physicians.** Presbyterian Medical Center, San Francisco
Mar. 17-18	**Trauma for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 17-19	**Internal Medicine for Internists.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 20	**Pulmonary Disease.** University of Kansas Medical Center, Kansas City
Mar. 20-24	**Fourth Postgraduate Course in Medical Technology (University of Colorado School of Medicine and Colorado State Society of Medical Technologists).** Denver
Mar. 20-24	**Joint Manipulation.** College of Medical Evangelists, Los Angeles
Mar. 21	**Gastroenterology.** University of Kansas Medical Center, Kansas City
Mar. 21	**How to Listen to Detail Men (Seventh in the series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri
Mar. 21	**The Enigma of the Ovarian Tumor (Fifth in the series "General Medicine and Surgery").** The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas
Mar. 21-24	**Lederle Symposium (Iowa & Nebraska Chapters of AAGP).** Fontanelle Hotel, Omaha
Mar. 22	**Endocrinology.** University of Kansas Medical Center, Kansas City
Mar. 23	**Dermatology.** University of Kansas Medical Center, Kansas City
Mar. 23-24	**California Medical Association Postgraduate Institutes—1961 (North Coast Counties in Cooperation With University of California, San Francisco).** Flamingo Hotel, Santa Rosa
Mar. 24	**Physical Medicine.** University of Nebraska College of Medicine, Omaha
Mar. 24	**Psychiatry.** University of Kansas Medical Center, Kansas City
Mar. 27-29	**Urology for Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 27-31	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 30	**Obstetrics.** University of Nebraska, Lincoln



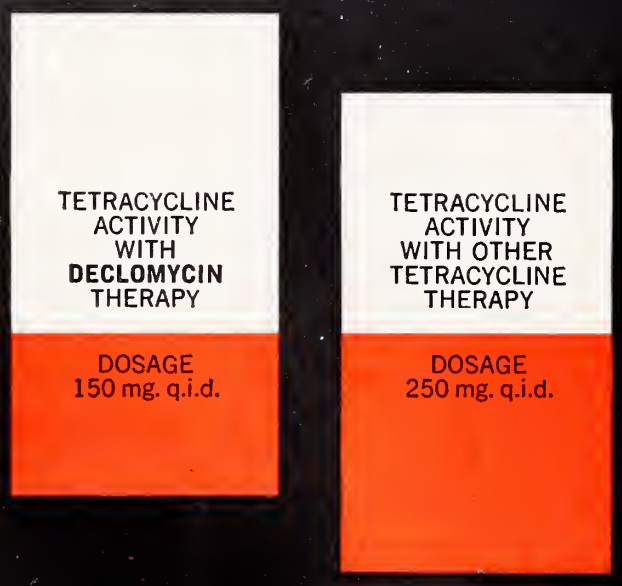
DEC

attains activity levels promptly

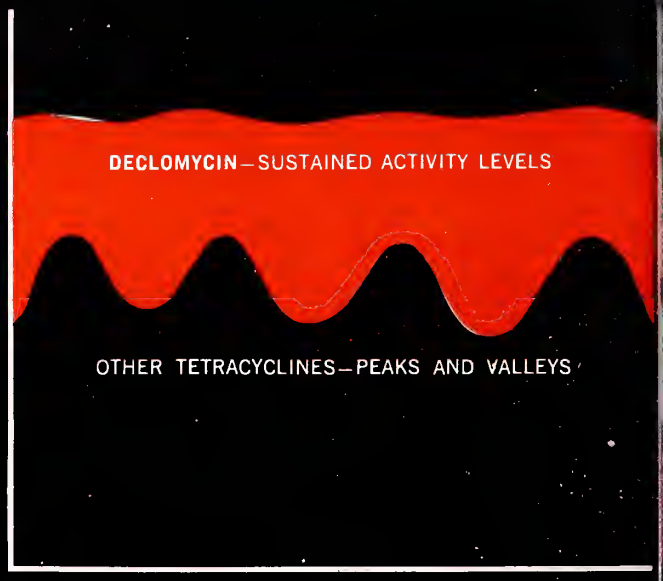
DECLOMYCIN Demethylchlortetracycline attains — usually within two hours—blood levels more than adequate to suppress susceptible pathogens — on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. The average, effective, adult daily dose of other tetracyclines is 1 Gm. With DECLOMYCIN, it is only 600 mg.

sustains activity levels evenly

DECLOMYCIN Demethylchlortetracycline sustai through the entire therapeutic course, the high act ity levels needed to control the primary infection a to check secondary infection at the original — or another—site. This combined action is usually su tained without the pronounced hour-to-hour, dose-i dose, peak-and-valley fluctuations which chara terize other tetracyclines.



POSITIVE ANTIBACTERIAL ACTION



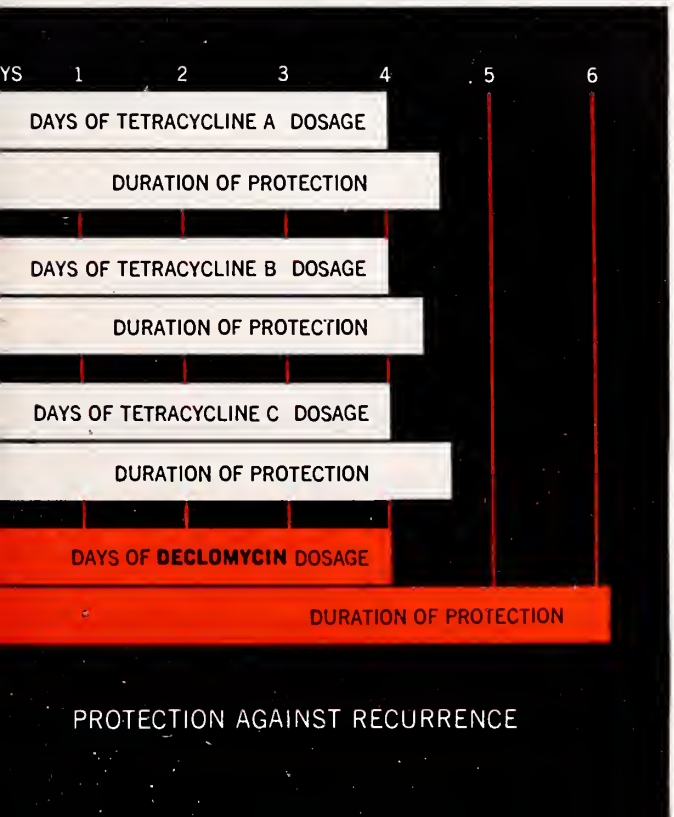
PROTECTION AGAINST PROBLEM PATHOGENS

LOMYCIN®

DEMETHYLCHLORTETRACYCLINE LEDERLE

etains activity
evels 24-48 hrs.

ECLOMYCIN Demethylchlortetracycline retains activity levels up to 48 hours after the last dose is ven. At least a full, extra day of positive action may us be confidently expected. The average, daily adult osage for the average infection—1 capsule q.i.d.—the same as with other tetracyclines...but **total** osage is lower and duration of action is longer.



CAPSULES, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. **Dosage:** 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz. **Dosage:** 3 to 6 mg. per pound body weight per day—divided into 4 doses.

PRECAUTIONS—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under constant observation.

Lederle

LEDERLE LABORATORIES
A Division of
AMERICAN CYANAMID COMPANY
Pearl River, New York

Iowa Chapter of the American Academy of General Practice

IS THE GP REALLY VANISHING?

Much has been written recently concerning the "vanishing" general practitioner. Incidentally, the term *family physician* is now more socially acceptable. Statistics are now being published to prove that soon the GP will be extinct, even though the basic rule in all prognostication is that extrapolation of curves is a dangerous pastime. The fact that more medical school graduates are going into specialties and entering practice in large communities, rather than diffusing their talents in general practice and settling in small towns, may indicate several trends, some of which may be reversible. For instance, the incomes of the surgeon and of the local M.D. who sends him cases are the same, for all practical purposes, because of the progressive income tax. Then too, the prestige value of having spent an extra three or four years in residency training may be growing less impressive than the less elaborately educated physician's willingness to answer night calls. There are now on file at the Iowa State Medical Society's headquarters about 100 appeals from communities wanting GP's and another 25 appeals from solo GP's who are worked so hard that they are seeking associates. No requests have come from lay sources for specialists, although a few medical groups have voiced a need for some—of particular varieties.

The decreasing proportions of GP's in the total medical community is not as alarming as it would seem at first glance. Of the 2,500 practicing physicians in Iowa, almost exactly one-half are general practitioners. Also, each practitioner is able to see more patients and to treat each one more effectively than he could 20 years ago, and except for major specialized surgery, he does much more than his medical father could do. With privileges to work in modern hospitals (in contrast with the situation of his opposite number in socialized England), he keeps his standard of practice up to that of the specialists in each of the departments that he works in, and in every procedure that he does. If the patient's problem is beyond his training, he then asks a specially trained colleague to help him —all the while maintaining control over the general treatment and condition of the patient.

An editorial in the NEW ENGLAND JOURNAL OF MEDICINE for December 8, 1960, asked rhetorically, "Does the average modern patient want a sentimental attachment and a shoulder to cry on, or does he prefer a conscientious, well-trained, scientific and considerate physician?" This implies that a head with a lot of knowledge cannot be found above a soft, sympathetic shoulder, and certainly cannot be found in the same body with a heart!

The December 10, 1960, issue of JAMA contained an article by Robert Crawford, M.D., that states the position of the family physician quite clearly. Dr. Crawford says, among many other things, "The general trend of medical practice has tended to isolate the physician from his community during the past 20 years. This has been because of the complications and speed of modern life and medicine that make it extremely difficult for a physician to enter into community life and public affairs. . . ."

The purpose of the American Academy of General Practice is not only to keep practicing physicians well informed, but also to encourage them to take part in community activities on local, state and national levels.

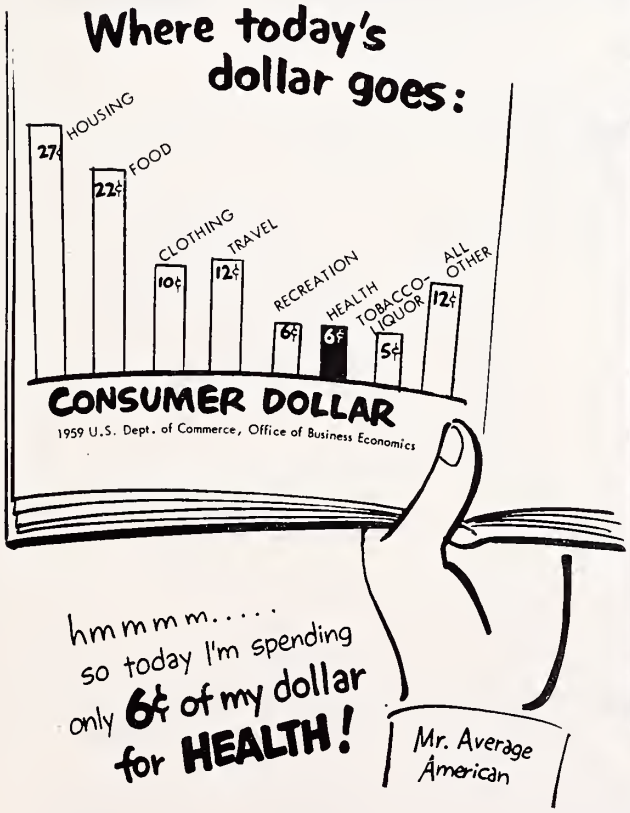
In Iowa, particularly, we need to encourage medical students at our University to enter into general medical practice in our state, rather than to specialize or to enter practice in other states!

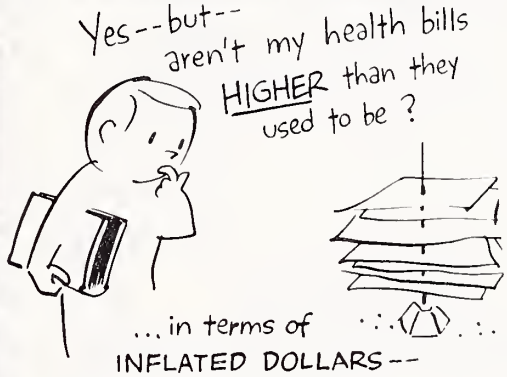
Make Plans to Attend
The Refresher Course for
General Practitioners
S.U.I. College of Medicine
Iowa City
February 21-24, 1961

The ? cost of Medical Care...

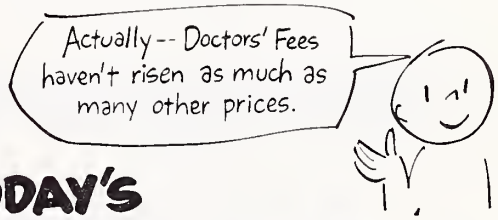
In a quandary trying to explain medical care costs in the light of today's over-all rising prices? If so, you'll be interested in these pages from the American Medical Association's new booklet "The ? Cost of Medical Care." This 16-page cartoon pamphlet is being distributed through your state medical society.

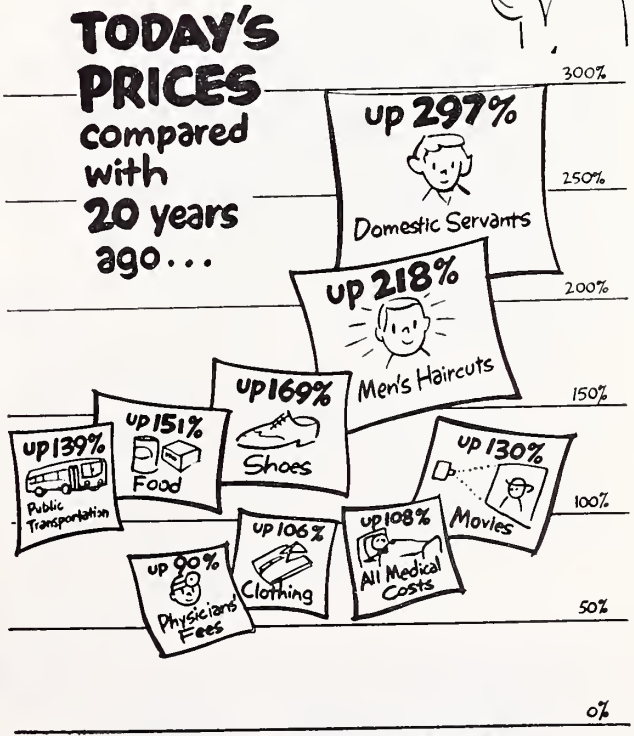
I know my health is a priceless asset.
If I'm sick, I want the best care there is.
But is medical care taking
a bigger bite out of my dollar?
That's what I'd like to FIND OUT.....



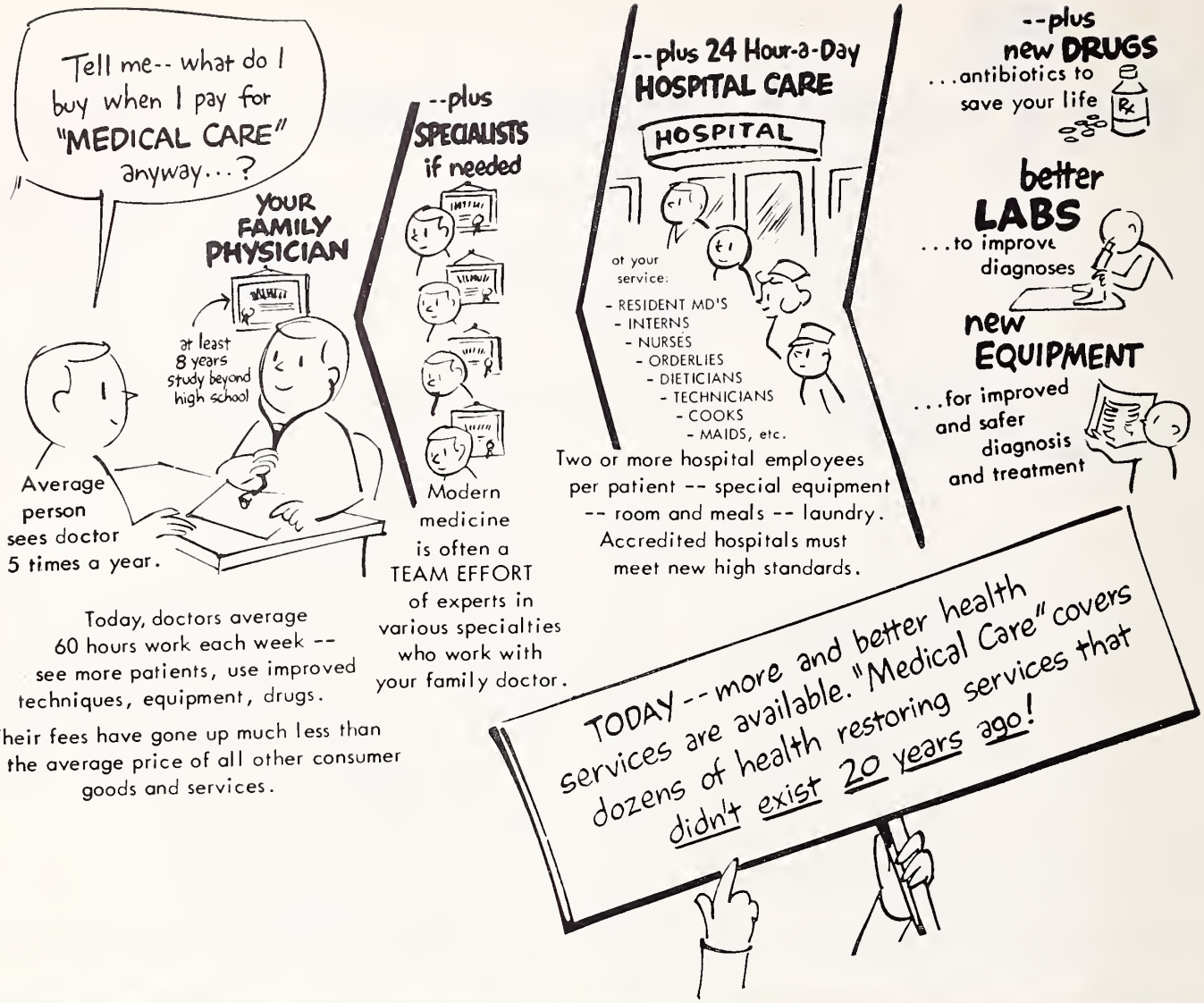


...in terms of
INFLATED DOLLARS--
yes, like everything else...but
let's compare the PERCENTAGE
of increase in the prices of
some things **today** with
20 years ago!

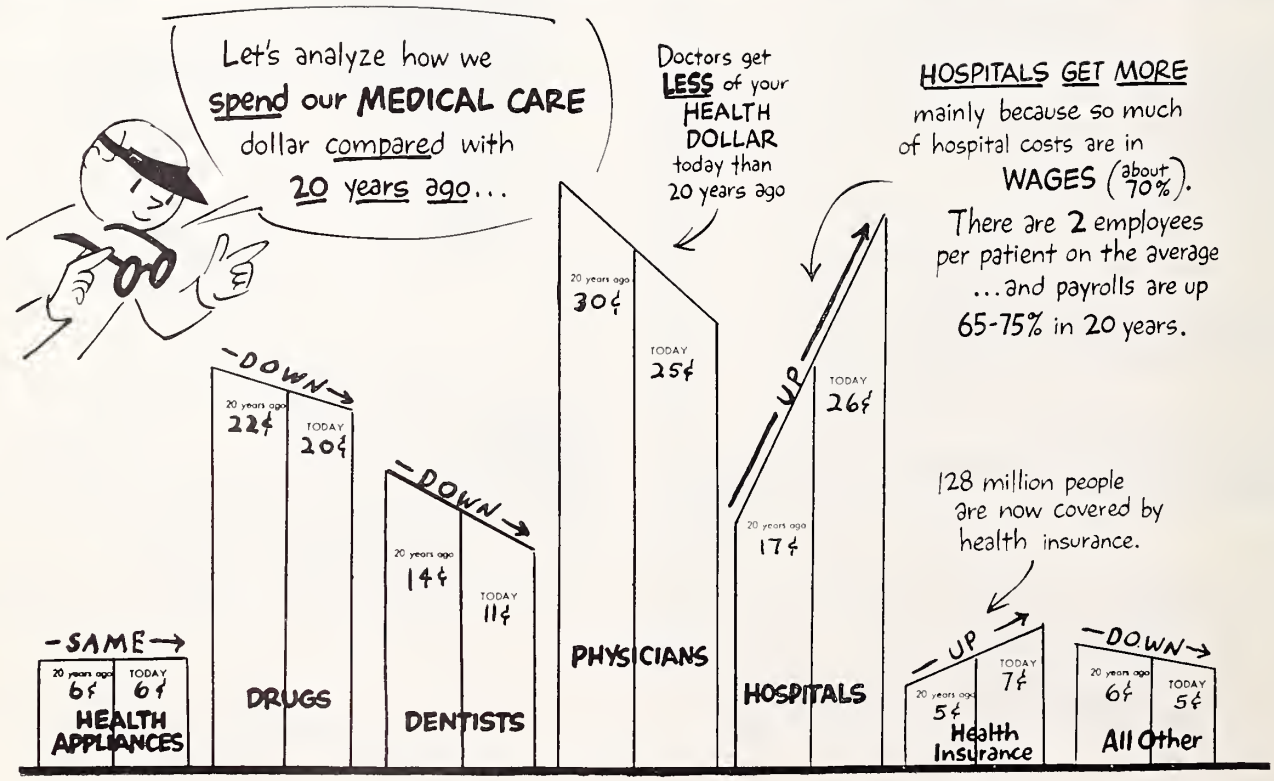




NOTE: Figures used in this booklet are the most recent available..."today" is 1959 and "20 years ago" is 1939.

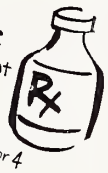


EACH DOLLAR SPENT FOR MEDICAL CARE



Meanwhile--in the last 20 years--
MEDICAL SCIENCE
has been making
SPECTACULAR PROGRESS--

Today--New **ANTIBIOTIC DRUGS** prevent PNEUMONIA that used to KILL 1 in every 3 or 4 persons it attacked.



A child born TODAY can expect to live **10 YEARS LONGER** than one born 20 years ago!

TODAY--Regular and Complete **PHYSICAL EXAMS** and early treatment keep thousands well who would have DIED just a few years ago.

TODAY--Danger of INFECTION through Surgery has been GREATLY REDUCED.

TODAY--Low Cost **VACCINES** can protect you against much serious illness.

Today--Average stay in a HOSPITAL for an **APPENDECTOMY** is 4 days--- 20 years ago it would have been at least 14 days.

Today--thousands leave hospitals WELL who would have DIED 20 years ago.

How can the average person **AFFORD** today's Medical Super-Care?

ANSWER: INSURANCE--72% of the total population and 49% of those over 65 today have...

...which helps you pay your expenses for those **UNFORESEEN HEALTH PROBLEMS.** Because people can't choose when they'll be sick, or how long--INSURANCE is the logical answer.

4 types of Voluntary Health Insurance

BLUE SHIELD

...pays your doctor for medical and surgical services. Gives you free choice of doctor.

BLUE CROSS

...pays hospital bills for board, room and special hospital services. Gives you free choice of hospital.

INSURANCE COMPANY CONTRACTS

...usually pay you cash towards hospital, surgical and medical bills or services. Do not restrict choice of physician or hospital.

GROUP PRACTICE PLANS

...and consumer sponsored plans -- provide specified types of benefits for care rendered by physicians working in groups.

TODAY voluntary health insurance pays $5.2 billion of the health care bills of insured people. Voluntary health insurance is "good medicine" -- it prevents worry -- helps you meet cost of illness.

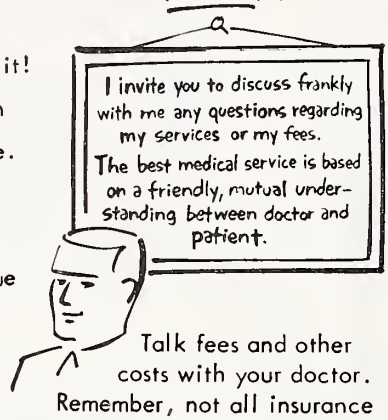
Also--as a result of medical science...
TODAY--the length of time a person is ill or hospitalized is much less than 20 years ago--hence the cost of being sick or absent from work is often less--an important economic factor.

FAMILIES WITH MEDICAL EXPENSE (per year)	HOW MUCH	HOW MANY
	LESS THAN $200	68%
	$200 to $500	21%
	$500 or over	11%

How to get the **MOST** from your **Health Dollar...**

(a) Choose your **PHYSICIAN** WISELY!

The right to choose your own doctor is a precious privilege. Use it! Choose a physician in whom you have confidence. He will give you personalized health service and help you get more value for your health dollar.



Talk fees and other costs with your doctor. Remember, not all insurance contracts are designed to pay doctor's total fee, nor intended to cover total medical and hospital charges. If you cannot pay in full, tell the doctor and he may be able to work out a plan for deferred or adjusted payments.

(b) Choose your **HEALTH INSURANCE** WISELY!

Can you choose and change doctors?

Can you choose and change hospitals?

Does it cover you anywhere?

Will it admit you to most hospitals?

Does it cover most common major illnesses?

Does it cover outpatient surgery, diagnostic and laboratory services, nursing home care, etc.?

Is it enough for big medical and hospital expenses?

Any "legal loop-holes" in contract?

Is company financially stable?

DON'T ABUSE your HEALTH INSURANCE. Use it only when you need it. Don't feel cheated if you're not ill.

Soooo...

Our health care dollar **buys more and better health care services** than ever before--

Today, doctors' fees have gone up -- but far less than many other family expenses in the last 20 years. And we're paying about the same share of our paycheck for "health care" as we did 20 years ago. We also have health insurance to protect us.

Best of all...advances in medical science help us live longer. Yes... our medical dollar is wisely invested in longer and healthier lives!

...a new public service publication for state and county medical societies from AMA.

The Implementation of the Kerr-Mills Bill Should Facilitate

Full Cooperation Between Professional Men and the State

Doctors of medicine are actively sponsoring the expansion of health services for Old Age Assistance recipients and the establishment of a Medical Aid to the Aging program in Iowa, under the terms of Public Law 86-778 (the Kerr-Mills Bill), but they think these undertakings can be completely successful only if they are administered in such a fashion as to permit a high degree of teamwork and cooperation between the State Board of Social Welfare (SBSW) and the practitioners and institutions that will provide health services, materials and facilities to the elderly.

It was not until 1959 that Iowa began, jointly with the federal government, to provide health care to the needy aged through a system of "vendor payments." Now, approximately 35,000 recipients of Old Age Assistance in Iowa are eligible for health services, and payments for them are made directly by the state to the "vendors" who render the services.

Physicians think that a change in the technic of administration will improve the services from the clients' point of view and will also improve relations between the SBSW and the "vendors." Actually, the OAA health care program represents a departure from the traditional welfare pattern. Under the old plan, the government provided cash with which the eligible recipients might purchase food, clothing, shelter, health services and other maintenance items. Under the arrangement established in 1959, the state continues dispensing *money* to recipients so that they may buy food, clothing, etc. and may pay their rent, but it now provides them health *services,* thus acting as an intermediary between the patient and his doctor, druggist, hospital, etc.

At the inception of the "vendor payment program," the SBSW undertook to refrain from establishing or interpreting policy in the health services area by itself, and an informal plan for periodic consultations between the Board and representatives of the "vendors" was agreed upon. Yet, though no one doubts anyone else's good intentions, the scheme hasn't worked out smoothly. The difficulties, thus far, have resulted from misunderstandings or differences of opinion as to just which issues are the ones requiring consultation.

For example, a few months ago—doubtless after reading a press release from the surgeon general of the United States Public Health Service suggesting flu shots for chronically ill patients of certain types—the staff of the State Department of Social Welfare undertook, without consultation, to instruct county welfare directors that *all* OAA eligibles currently being treated for the specified ailments were to receive flu vaccine. The doctors were disturbed for a number of reasons. First, they regarded this order as dictation from individuals who lack medical training. Second, since it is axiomatic that each patient requires treatment fashioned to his particular requirements, no one with a knowledge of medicine is ever willing to say that what is good for one individual must be good for all who have the same diagnosis. Third, an important principle was involved. If a state agency began by ordering physicians to administer a vaccine, it might be expected shortly to start dictating medical management more and more completely. Patients certainly would suffer if medicine were to become an assembly-line affair, managed by non-doctors.

Physicians recognize that it is the province of the welfare people to arrange the details of the program and to determine the financial eligibility

of the persons to be served, but as regards the services rendered to specific individuals they hope the SBSW will recognize the professional man's superior competence. In other words, we perhaps should say, it is important for the state to allay the fears which plague professional people that "he who pays the piper will call the tune."

POINTS ON WHICH THERE IS AGREEMENT

The SBSW has performed a valuable service in preparing the initial draft of an MAA bill, but that draft constitutes just a point of departure for legislators and other interested individuals. The measure must contain some specific provisions, and the SBSW and representatives of most of the interested health groups have met several times to discuss the preparation of a detailed proposal.

There is virtual agreement between the SBSW and the various health groups as to the following:

1. The SBSW should be designated as the state agency having full responsibility for the MAA program.
2. The program must involve direct or "vendor" payments to those who provide health services and facilities.
3. The law should permit the furnishing of all the types of services enumerated in Public Law 86-778, but should be flexible, and the SBSW should be empowered to formulate and implement details within the limitations imposed by the funds that are available and the directives set by the Legislature.
4. The SBSW should negotiate with the various health groups regarding fees, scope of services, etc., and should have final authority with respect to these arrangements.
5. The determination of financial eligibility is a welfare matter to be determined by welfare personnel in accordance with rules and regulations determined by the SBSW.

Most of the interested health groups have recommended the following provisions for inclusion in the MAA bill:

1. *A statement of purpose.* Here, the Legislature can set the limits within which it wishes the SBSW to erect rules and regulations for the program. The federal statute is extremely permissive, "enabling each state . . . to furnish medical assistance on behalf of aged individuals who are not recipients of Old Age Assistance but whose income and resources are insufficient to meet the costs of necessary medical services."

2. *Creation of an advisory board or council.* Most of the health groups have had satisfactory experiences with such official advisory bodies as the State Board of Health and the Hospital and Other Health Facilities Advisory Council. The functions of a like panel would not relieve the SBSW of its authority over health care programs for the needy and near-needy, but would give it the benefit of informed opinion on health issues, and would give the members of the health groups an increased sense of participation.

3. *Professional determination of medical need.* The law should make this requirement explicit. The Michigan statute declares, "Such services shall be rendered upon certification by the attending licensed physician that a service is required for the medical treatment of an individual."

4. *Speedy local determination of eligibility.* Promptness frequently will be essential to the effectiveness of treatment. Moreover, health care programs traditionally have been administered by county officials through the use of county poor funds. Thus, there should be the greatest possible degree of local autonomy in the administration of the MAA program.

5. *Appointment of an independent administrative and fiscal agent.* It is clear that both state and federal law would permit the SBSW to appoint a private organization to act as its agent in arranging for the provision of services under the MAA program and in paying the suppliers.

We strongly recommend that the SBSW be encouraged to contract with a private agency for the processing and paying of claims. Such an arrangement would neither dissipate the SBSW's authority nor prevent its cancelling its contract with the private agency if it desired to do so. Designation of Blue Cross-Blue Shield or a commercial insurance company as such an agent would be a means of avoiding some of the irritations that are otherwise inevitable in any system under which the state makes payments to professional persons and organizations.

Such a set up would be economical, for it would utilize existing equipment and already trained workers, thus relieving state and county agencies of the necessity of purchasing machinery and either hiring additional personnel or utilizing welfare workers for clerical tasks.

Perhaps most importantly, the use of an independent fiscal agent would constitute a satisfactory blending of professional services, free enterprise, and state supervision and control.

CONCLUSION

As we have done before, we urge the creation of an MAA program in Iowa—one that is financed liberally enough to assure the achievement of its objectives. But it is our firm belief that both the existing "vendor payment program" for OAA recipients and the new MAA program can be maximally effective only if they are administered in such a way as to elicit the active cooperation and support of the physicians and the others who are to provide health services.

It is important that these programs be recognized as cooperative projects which are dependent for their success upon the combining of (1) traditional welfare concepts and (2) traditional health care concepts.

We believe that the suggestions which have been reported here, if the Legislature adopts them, will help appreciably in establishing a beneficial partnership between the State of Iowa and the health-care professions.

MEDICAL HISTORY

Medicine—Then and Now

TOM BENTLEY THROCKMORTON, M.D.

DES MOINES

THE PRACTICE OF medicine today is a far cry from what it was a century ago—yes, even 50 years ago. However, the changes which have taken place in medicine are in keeping with some of the innovations which have come into being in other fields. Progress seems to be the most important product of mankind, and indeed it is hard for one to keep pace with the rapid transition which is constantly taking place in the world. Were the doctor of the 1860's to return to his former habitation, he would be more confused about the present methods of medical practice than was Rip Van Winkle when he first viewed his environment after 20 years of slumber.

Since I have been requested by the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY to record my impressions of changes which have taken place in medical practice during my lifetime, I wish first to lay a foundation upon which to build the superstructure of what my immediate medical ancestors and I knew medicine to be.

A DOCTOR WHO PRACTICED 100 YEARS AGO

My great uncle, who lived in western Pennsylvania, was encouraged to study medicine by an old country doctor in the early 1860's. At that time, many doctors were inclined to be desultory and alcohol-imbibing individuals, no doubt because of the long hours and severe physical hardships which they encountered in their practices. Realizing the sterling qualities of my great uncle, this man who was himself clean of habit and character and an upright Christian gentleman, felt he had found a youth capable of helping restore the profession to what he thought it ought to be.

In those days it was a preliminary requirement for one contemplating entrance into a medical college to pursue his studies under a preceptor for at least two years. During this probationary period, the novice studied the standard works on anatomy, institutes of medicine (later known as physiology), chemistry, materia medica and therapeutics, the practice of medicine, obstetrics and surgery. The teacher assigned lessons, and then heard recitations as opportunity afforded itself, in his home, at his office or while the two were riding to and from calls in the country. When the student became proficient, he was allowed to assist in the making of the various powders, pills and decoctions so important in that day. Lacking such a pupil, a doctor found it necessary in the rush season to have his wife compound and prepare medicines in his absence or during the fleeting hours when he was snatching some much-needed rest.

There were no standardized drugs at that time. Digitalis leaves were steeped in water on a stove, and the strained liquid—infusion of digitalis—was used to restore a decompensated heart, i.e., to correct the condition now scientifically termed auricular fibrillation. Tincture of opium, powdered opium and Dover's powder (a mixture of powdered opium, ipecac and milk sugar) were the sheet-anchors in the relief of pain. Calomel was the purgative of choice, and many an individual was salivated and sometimes deprived of some teeth in consequence of its too-vigorous use. As "one who had suffered from the hands of many physicians" put it, "the doctor rides with a free good will, but he never forgets his calomel." To "purge and puke" a patient was sure to get good results, one way or the other. For the latter effect, powdered ipecac and alum, administered orally, never failed, and for a purgative Dr. Rush's "Thunderbolt" had no superior. These therapeutic agents were standard equipment in the old time country doctor's satchel or saddlebags, although he added other preparations as time brought newer remedies to the profession.

The early medical schools in this country were, in fact, stockholder establishments. The faculty created, owned, managed and ran the school. Their only source of revenue was their students. The first of them was established in Philadelphia in 1765, and was known as the Medical School of the College of Philadelphia. Later, it became the medical department of the University of Pennsylvania. The second medical school to arise in the Quaker City was the Jefferson Medical College, which came into existence in 1825. At that time, the better medical schools required attendance at two courses of lectures of five months each, but stipulated that only one course of lectures could be taken in a

Dr. Throckmorton read this paper at a meeting of the Medical Library Club, in Des Moines, on February 24, 1960.

single year. Beginning the course in the fall and ending it in the early spring allowed the students an opportunity to work during seven months, thus accumulating enough money to pay for their tuition and maintenance, should occasion require it.

After attending two courses of lectures at Jefferson and then graduating from that institution in the spring of 1865, my great uncle returned to his native county and started his practice in a small inland village. I recall his telling me of his first consultation. Shortly after hanging out his shingle, he was called to see a man who lived some miles away in the hills. He found the patient ill with a severe cold, and in a few days it turned into what was then called croupous pneumonia. As the man became desperately ill, my great uncle grew fearful of the consequences which he felt would arise if he lost his first patient, so he arranged for a consultation with an older practitioner who lived in a neighboring hamlet. It was a cold, windy day in March when, riding horseback with saddlebags behind, he set out to meet the consultant. His thoughts weren't on his patient; rather, they were centered on how he should conduct himself in consultation. His professors had failed to mention the elements of ethical behavior that pertained to such meetings, except to state that the younger physician was supposed to present his diagnosis first, so as not to be prejudiced by an older colleague.

Arriving at the farmhouse, he noticed the other doctor's horse was standing at the hitchrack. Entering the house, he laid aside his wraps and saddlebags, warmed himself, and then asked the consultant to see the patient. Much to his surprise, he learned that his professional brother had already seen the patient and had made a "thorough examination" which consisted of looking at the man's tongue, feeling his pulse and sticking his finger into his bowel. "And that was all the examination the consultant made of a case of croupous pneumonia," my great uncle laughingly concluded. "I wonder sometimes how any of the patients survived in that early day, with such doctors as he."

MEDICINE IN THE LATE NINETEENTH CENTURY

My father, a native of Greene County, Pennsylvania, came to Iowa as a lad of four years when my grandfather moved his family westward in 1856. Pioneering in that day called for the utmost in physical endurance. Educational facilities were meager, so in the early 1870's Father went back to Greene County and pursued his higher learning at Waynesburg College. His great liking for his doctor uncle caused him to decide on taking up medicine as his life's work. He lived in his uncle's home, and in return for his room and board and for his medical education, he cared for the doctor's horses, hitched and unhitched his teams, did the chores about the barn, greased the rigs, oiled the harness, cleaned and shined the doctor's boots and made himself generally useful. Frequently he was shown some patient at the office, or would ride with the doctor in the country while he was making calls.

Travel in those days was on foot, on horseback, in a buggy or cart, or in the winter time, by sleigh. This meant that the doctors of that era were exposed to the weather at all times. They protected themselves as best they could against the winter cold by wearing beards and buffalo coats or other suitable heavy outer-wraps, and by placing a heated soapstone or a lantern under the laprobe. Ofttimes they attached a lantern to the dashboard of the buggy or sleigh to help light the way after dark. What a contrast is provided today by our surfaced roads, closed automobiles with heaters and air conditioners, and farm houses fitted with modern conveniences!

In 1875, after two years of tutelage under his uncle, Father went to Philadelphia and matriculated at Jefferson Medical College. The building was located, then as now, at Tenth and Walnut Streets. The faculty was composed of seven professors, two of whom were outstanding men, namely Samuel David Gross, professor of surgery, and Jacob Mendez DaCosta, professor of medicine. It is of interest to note that DaCosta was the first to recognize, among soldiers in the Civil War, the symptoms of "soldier's heart," an ailment that finally acquired the more euphonious name "neurocirculatory asthenia" in World War I.

After paying the entrance fee at the College, the student then registered with each professor at his office, which in each case was in the doctor's home, and paid an additional fee, in return for which he received a matriculation card signed by the professor. These cards entitled the possessor to attend the lectures that were given to all of the students, the second year men occupying the lower seats and the first year men the upper ones in the college amphitheater. Thus, during their second year, the students listened to repetitions of the same lectures.

There were no written examinations. Members of the senior class, at the close of the college year, were relayed in suitable numbers to the offices of the faculty, where each student was interrogated by the professors. This method saved time in that there were no papers to look over, and it gave the professor an opportunity to size up the student. As the interrogated one left the office, those awaiting their turns would query him about the questions he had been asked. It was said that one student, upon being asked some difficult questions by Dr. Gross, exclaimed, "Professor, I thought you only asked general questions." After that protest, Dr. Gross asked, "How many arms does a man have?" and the student promptly answered, "Two. Now that's the kind of question I like!"

When all the class members had been quizzed, the faculty met and decided who should be graduated and who should be "throwed"—or, in the

slang of today, "flunked." In case of failure, the unlucky one was entitled to appear at a later date before the full faculty and to plead his case. In some instances, mitigating circumstances brought about a reversal of the faculty action, and the individuals thus rescued were said to have "come in on the bus" for graduation.

Hospitals, as we know them today, were nonexistent, but a few cots were provided for surgical patients who had been operated on before the class and were recovering from the anesthetic. There were no nurses. Orderlies waited on the professors and cared for the patients. Obstetrical cases were all cared for in the home. There were no specialists. The acme of major surgery was the amputation of a limb, and the desire of every surgeon was the development of "laudable pus," following the procedure, for it was taught that without it no wound of any consequence could properly heal. Today, of course, if a patient has so much as a stitch infection, the surgeon is concerned. Germs as a cause of infection were unknown, and antiseptic measures didn't come into vogue until Lord Lister pointed the way.

The etiology of infectious diseases hadn't yet been determined, and the physician had nothing for their prevention or cure, except for the fact that smallpox had been partially muzzled by vaccine. Even the vaccination procedure was beset by serious hazards. Early, the vaccine was obtained by pressing wedge-shaped ivory points into a festered sore on the udder of a vaccinated heifer. No attempt was made to be antiseptic in the procedure. The dried substance on the points contained not only the virus of smallpox but also a mixture of germs as well. No effort was made to cleanse the patient's skin before vaccination. The old time doctor just scratched and scraped the subject's skin with the ivory point until he had produced a bloody, oozing wound, and thus had transferred the dried virus and accompanying germs to it. Sometimes scabs from successfully vaccinated patients were used to inoculate other persons. Little wonder that sore arms and sometimes axillary gland abscesses were the order of the day! Ague or paludal fever—better known nowadays as malaria—was treated symptomatically with quinine, although the cause of the disease and the means of its dissemination were unknown. The first ounce of quinine my father bought cost five dollars, but later he could obtain a pound of the drug for that amount or less. The diagnosis of syphilis was based on the presence of an indurated sore and a generalized skin eruption, and treatment of the disease consisted of some form of mercury and the iodides. There was no specific treatment for the prevention of lockjaw.

Such was about the situation and teachings in the better medical schools in this country when my father graduated from Jefferson Medical College in March, 1877. Armed with a full set of whiskers, a diploma, a case of amputation instruments, a pair of obstetrical forceps and some other medical paraphernalia which he had purchased in Philadelphia, he returned to Iowa and opened his office in a small Lucas County town, though there were five physicians already practicing in the community.

Shortly after his arrival, one of the older doctors invited him to ride along into the country to see a most unusual case—that of a young boy with a peculiarly fractured leg. The elder physician described quite graphically the trouble he had encountered in trying to keep the ends of the bone in apposition. "The disunion," he declared, "unquestionably occurred through the knee joint, allowing the joint ends to slip past each other just as my fists override each other." He dropped the lines on the dashboard of his buggy, and doubling up his fists, he proceeded to illustrate just how he imagined the joint bones slid past one another. This unique and unheard-of theory greatly puzzled my father, for common sense told him that if the ends of the bones comprising the knee joint had been torn apart, all of the soft tissues about the joint would have had to be torn before the ends could possibly slip past one another.

When they arrived at their destination, an examination of the fractured extremity quickly revealed to my father the real difficulty. The knee joint was perfect, and the fracture involved the lower portion of the femur just above the joint. The surgical instruments that were then employed in an attempt to reduce the fracture consisted of a skein of yarn wrapped about the patient's ankle and a rope stretched from it to a flatiron which rested on the foot of the bed.

There were complications, due to pressure necrosis, and it was later necessary to amputate the extremity. The army surgeon who performed the operation prided himself on the dexterity with which he handled the amputating knife and the rapidity with which he severed the leg—six minutes in which to cut everything that was soft, to tie everything that bled and to saw everything that was hard.

Malpractice suits were uncommon in that early day, but this case became a matter of court record some time later. The bones of the amputated extremity—showing that fracture through the lower portion of the femur had been responsible for necrosis of the posterior aspect of the thigh—had been left in the custody of one of the local doctors. Before the trial, however, the bones mysteriously disappeared from the doctor's office, and thus, without Exhibit A, a verdict was rendered in favor of the defendant.

As I have already said, malpractice suits were relatively uncommon at the time of the horse and buggy doctor. Regardless of the treatment and its result, most people were satisfied that "Doc" had done his best. This was especially true in cases of

fracture in which shortened limbs and deformities resulted. If a serviceable use of the parts was obtained, the patient was grateful. Most malpractice suits at that time were the result of hard feelings that existed between individual members of the medical profession. In those days, most doctors practiced alone, and many of them looked upon their professional brothers as competitors rather than as colleagues. Ofttimes the foundation for hard feelings was laid when a physician felt he had been unjustly treated by such a "competitor," and he was only too glad to testify against him in court.

Also, it was more or less the custom for the established doctors to "gang-up" on a newcomer. This attitude was somewhat paradoxical, since some of the physicians disdained to speak to or counsel with each other, and yet they were willing to close ranks against a common foe. The effect of their united action was somewhat akin to that produced by a lad who enraged a quiet dog by running a stick along a picket fence, and then kicked at the barking and infuriated animal as it tried to get at its tormentor. The offended physican, in most instances, harbored a bitterness as a result, and awaited an opportunity to retaliate.

But it wasn't always the established physician who took the initiative. Not infrequently the newcomer aroused the enmity of the older doctors by using overzealous tactics in working up a practice, or by making disparaging remarks about the "old fogies." The old family doctor was extremely jealous of his patients, for he cared for them as if they were members of his own family. Nothing irked him more than to have an old patient drift away from him, and especially if he felt that some underhand means had caused the defection. On one occasion a family doctor had been dismissed, much against the wishes of some members of the family, because someone had insisted that the "new doctor" fresh from medical college had better remedies to offer. The young physician's egotism was aroused. When he entered the sickroom, he noticed an array of medicines on a table by the bedside, and without even stopping to examine the patient, he proceeded to look over the collection of bottles and to sniff their contents. Having called loudly for a coal bucket, he dumped the liquids and pills into the receptacle, exclaiming, "Take them out of here and bury them! There's enough poison there to kill half the people in the county!" Little wonder that such behavior caused hard feelings and encouraged the older doctor to await the day when he could even the score.

The equipment of the country doctor was quite meager. He was expected to do everything from extracting teeth to amputating limbs. As the pharmaceutical houses came into existence, his supply of drugs broadened, and the new products were easier to carry in his medicine grip than his own preparations had been. However, there was one old timer who prided himself on never owning a medicine grip. He carried his pills, tablets and capsules in his coat pocket, and if waiting on a patient in his home he would pull out a handful of the mixture, and after blowing on them to separate the various kinds and then sorting them with his finger, he would lay aside what he thought was indicated. If additional medication was needed, someone from the patient's household had to come to his office for it.

Counterirritants ranked high on the list of therapeutic necessities. They were employed for the purpose of influencing morbid processes in more or less distant parts of the body. They consisted, largely, of mustard, red pepper, turpentine, cantharides and croton oil. When one or more of these agents were applied to the skin, at a point somewhat removed from the initially painful area, the patient soon became more acutely disturbed by the new discomfort than he had been by the original pain. This method of distracting the patient's attention resembled the technique employed by a blacksmith who, when shoeing a fractious horse, had his assistant put a "twist" on the animal's nose and thus keep it from finding out what was being done to its hoof.

All of the old time practitioners had one thing in common; they never were at loss for something to do for their patients, even though they had little to work with. This one of their characteristics is best illustrated by the following verses:

Four doctors tended Johnnie Smith
They blistered and they bled him,
With squills and antibilious pills
And ipecac they fed him.

They stirred him up with calomel
They tried to move his liver,
But all in vain, his little soul
Was wafted o'er the river.

In the early days when the doctor was not available, home remedies were much used. To prevent illness, a bag containing assafetida was fastened to a string and hung around the neck of the individual in the hope of warding off disease. "Red precipity" ointment, applied in a ring about the neck, was used frequently to prevent vermin from invading the body proper. Hot bricks, hot stove lids, or steaming hot ears of corn all served in lieu of hot water bottles or electric pads. Sassafras tea and "sulfur and molasses" were routinely used by many people as renovators in the spring time. There were no enema bags except the home made variety. One of the commonest was made from the dried bladder of some animal—usually beef or hog—and a goose quill. Mustard plasters, bread and milk poultices, flaxseed poultices and hot onion poultices—all of these had their devotees and therapeutic admirers. Goose grease, skunk oil and turpentine stupes were commonly used. For a croupy cough—and there was lots of croup in

those days—a mixture of sugar and lard, given by mouth, and a hot onion poultice applied to the chest was advised. Usually the results were spectacularly good. As a matter of fact, it was unnecessary actually to administer this treatment; the youngsters for whom it was proposed found it better to stop coughing than to submit to the cure! Not infrequently when a foreign body had become attached to the cornea, a flaxseed was placed in the eye in the hope that it might loosen the object.

PHYSICIANS HAD TO BE INGENIOUS

The resourcefulness of the old time practitioner, at times, was amazing. On one occasion after driving several miles into the country, a doctor attended a man with a greatly distended bladder and found, to his consternation, that he had neglected to bring along a catheter. A trip to town and back would have consumed about three hours. The patient was suffering intensely. An opiate helped to diminish the pain, but didn't remove its cause. The old doctor left the house and seated himself on a log to ponder what to do. As he was reflecting on the matter, a flock of geese waddled by. Suddenly a way out of his predicament occurred to him. Running down a goose, he extracted the largest feather he could find. He then cut the quill from the feather. A search in the barn revealed a hay fork with rather small tines. By slipping the quill over a tine, he produced a cannula and obturator. He broke the tine from the fork, and then proceeded to sharpen its point on a grindstone, thus creating a home made trocar. After sterilizing the instrument and cocainizing an area above the pubic bone, he introduced the trocar into the patient's bladder and relieved the urinary retention.

Well back in the horse and buggy days, another doctor was confronted with a patient who had a piece of meat lodged in his esophagus. The usual procedure in such cases was to introduce a probang into the gullet and push the obstruction downward into the stomach. But the necessary instrument wasn't at hand. Going to his buggy, the doctor obtained his whip. The stabilizing element of that implement was whalebone, around which a covering had been woven. Stripping the whalebone of all extraneous material, he steamed it to make it more pliable, and then introduced the home made bougie into the esophagus and gently pushed the obstruction into the stomach. This crude but effectual method was carried out in a farmhouse. Today, a bronchoscopic team performs the same service under exacting controls in a well equipped hospital.

A very dear friend of my father's, one of the pioneer doctors in our county, showed great sagacity on a memorable occasion. He was called upon, one night, to pay a visit on a sick lad who lived some distance in the country. He found that the youngster had a badly swollen throat and was having great difficulty in breathing. Examination by candlelight revealed that the fauces was almost closed as a result of quinsy. Having no desire to lance a throat abscess under such trying conditions, the doctor advised pain-relieving measures and sleep. He called for a pitcher of boiling water, to which he aded some myrrh and chlorate of potash. He then directed the patient to inhale the steam. The "easing powder" consisted of ipecac and powdered alum. After getting the patient to sip a glass of hot water, he gave him the powder. Then, after assuring the family that the boy would soon be better, provided that he kept his head over the edge of the bed and continued to inhale the steam, the doctor climbed the ladder to the loft, presumably to get a little sleep. Shortly, the patient began to cough and retch. Soon a voice called out at the bottom of the ladder, "Doc! Oh Doc! Come down quick! Jakey is puking like a sick dog." When the doctor finally got down into the room, he found that the coughing and retching had ruptured the abscess, thus relieving him of the necessity of performing any surgery.

One of the trying cases that came under my father's care during his early practice was that of a man who, during harvest time, jumped from a threshing machine and fell upon a pitchfork which a fellow workman had left standing in the ground. The fork handle struck the man's perineum, entered the bowel for a distance of between 14 and 16 inches, and perforated the rectum and bladder in its passage. Father came to aid the injured man and, realizing the seriousness of the accident, called in a consultant. The older physician questioned the advisability of any operative interference, and stated that regardless of anything one might do, the man would surely die. Despite that adverse prognosis, Father felt that the patient was entitled to a chance. Accordingly, as best he could by the anal route, he sutured the rent in the bladder and rectal wall, and left an indwelling catheter in the bladder. The bowels were securely locked, and pain was assuaged by sufficient doses of powdered opium. Heat, in the form of stupes, was applied to the greatly distended abdomen. The patient's postoperative period and convalescence were stormy. The first alvine evacuation occurred on the sixteenth day. Grains of sweet corn were voided later. In spite of the fistulous opening between the bladder and bowel, Dame Fortune smiled on the young surgeon, and eventually the patient recovered and again had normal use of the injured parts. Incidentally, that man officiated as one of the pallbearers at my father's funeral some 60 years later.

DOCTORS' FEES IN THE EARLY DAYS

The country doctor became the family doctor and was held in high esteem by his patients. When the call came for his services, whether at night or in fair or foul weather, he answered it, for med-

icine to him was a profession, *not a business.* His first duty was to his patient, not to his own physical comfort or welfare. Rural practice brought to him genuine joy, for it was the furnace that removed all dross and left in the crucible the pure, unadulterated substance from which confidence was forged, the keen edge of judgment shaped and character molded. It brought him into close relationship with the families that he served. The undying gratitude which ofttimes was his, and the esteem in which he was held in the community brought to the country doctor that something which the plaudits accorded the city physician could not excel. The long hours and the physical hardships that went with a country practice had their recompense in the knowledge of a task well performed, a pain assuaged, a broken heart comforted or a soul permitted to make its exodus in peace. For these and for many other blessings the country doctor, now a personage of the past, was revered and his memory made a household legend.

Medical fees were one of the bothersome problems of the profession in those early days just as they are still a serious problem today. Years ago when the practice of medicine was in the nascent state, the physician made no outright charge for his services. That matter was left entirely to the patient. If the sick one or his family saw fit to reimburse the doctor they put money into his hat, which had been placed conveniently with the crown down.

In time, however, the doctors in many localities decided on a fee schedule of their own. This act created at least some uniformity in charges, although the schedule wasn't always adhered to. Lapses were due, largely, to the attitude which I have already described—the notion held by many a country doctor that every other practitioner was not a colleague but a competitor. I recall my father's telling about one such man in a town some miles distant who charged just 50 cents for making calls on people living in or near the village where my father was then located, claiming that the visits he made there were "in fighting territory."

Physicians, as a rule, are honorable men, and they are imbued with a real desire to help their fellowmen. They realize that there is no price that can be set on one's health, and accordingly most of them set the fees for their services much as they would if they, themselves, were the patients. In the event, however, that a patient feels he has been unjustly charged, he can now state his claim before a conciliatory board composed of non-interested doctors, and that body will decide what is fair and just. It should be borne in mind, however, that a doctor, unlike the merchant who has goods to sell, has nothing but his professional service to offer to the public.

The practice of licensing physicians came into existence with the formation of the State Board of Medical Examiners, in 1886. Before that year, anyone who desired to do so could hang out his shingle and announce to the world that he was prepared to treat humanity, even though he had never graduated from a medical school or had studied medicine in a doctor's office. The "time act," as it was called, which the State Legislature passed in that year, permitted all physicians then practicing in the state to be licensed, some by diploma, some on the basis of five years' prior practice, and others by examination. Since that time, all who have sought to practice medicine in Iowa have been obliged to meet certain requirements before they could be licensed to practice the healing art.

In this state the medical schools also changed their requirements from a two-year to a three-year course of study in 1888, and in 1899 lengthened their course to four years.

Because there were some variances in licensure —including reciprocity—in the various states, the National Board of Medical Examiners was formed in 1915. Certificates issued by that board were subsequently accepted by most state boards in lieu of their own examinations, and thus a successful candidate in any state was permitted to practice in practically all of the other states of the Union, upon presentation of his credentials.

THE EVOLUTION OF MEDICINE IN MY OWN TIME

Thus far I have written mostly about the early practitioners, many of whom were country doctors. I have mentioned the character and quality of the early medical schools, the prerequisites for admission and the requirements for graduation of medical students, the trials, tribulations and hardships of the country doctor, the lack of hospitals, nurses, specialists and pharmaceutical houses, the primitive equipment of the early practitioner, his resourcefulness in some emergencies, and some matters having to do with fees and the licensing of physicians. Let me now call attention to medicine as I have known it during my lifetime.

First of all, I consider my being reared in the home of a country doctor was one of my life's greatest privileges. There my first knowledge of medicine came instinctively, as I lived and breathed the atmosphere that permeated the house. Making trips to the country with Father, although many times boring and tiresome, nevertheless had a subconscious influence on me and doubtless contributed to my willingness to consider medicine as a vocation when the time came for me to make a choice.

Prior to, and about, the time I began to consider making medicine my vocation, three novelties—electricity, the telephone and the automobile—began to change the habits and lives of people to a great extent. It was during my boyhood that electricity was introduced into the community. Its use in furnishing light was quite a change from the candlelight days of my progenitors and the kero-

sene lamps of my parents' time and my youth. With the passing of years, various electrical appliances became available to the physician which enabled him to render better service to his patients. The telephone, also, arrived at about the same time and replaced the home made apparatus that had connected Father's office with his residence. Then came the automobile, and it gradually supplanted the horse and buggy. This change brought special relief to the physician who was allergic to horse hair and dandruff. He no longer had attacks of asthma, unless he continued to maintain a stable, curried his horses and rode behind one during the shedding period. In my opinion, these three agents, electricity, the telephone and the automobile, did more to serve the welfare of the people and aid the doctor in rendering better care to his clientele than did any other three factors I now recall.

When I became a medical student in 1904, medicine had made much progress since my great uncle and my father began their practices. During the interval the causes of many infectious diseases had become known, as various germs were isolated; aseptic surgery was coming into its own; the abdomen—an unexplored area for many years—was being opened in cases of appendicitis and other disorders; antitoxin for diphtheria, crude as it was, was saving many lives; the packaged products of pharmaceutical houses to a large extent had replaced the home-prepared remedies of the earlier physicians. Viruses were still unknown, however, allergy was unheard of, and disease was continuing in endemic and epidemic forms. Typhoid fever, tuberculosis and pneumonia were the prevailing causes of death. Infants and children were succumbing in great numbers to various types of infection and malnutrition. Hygiene and sanitation were just coming to the attention of the profession, and the role of the house fly as a carrier of germs, and the mosquito as a conveyer of the malarial plasmodium and yellow fever, were arousing health officers to the necessity of insect eradication or control.

In the better medical schools, specialties such as ear, eye, nose and throat, nervous and mental diseases, diseases of children, diseases of the genitourinary tract, diseases of the skin, and diseases of the bony structure of the body had gradually crept into the curricula. Ward rounds were being conducted, and clinics in internal medicine, surgery, obstetrics and the various other specialties were being held. Four years of nine months each, together with quizzes and written examinations, were required for graduation.

When I finished Jefferson Medical College, in 1909, one's diploma didn't permit him to practice until he had been licensed by a state medical examining board. Also, though it wasn't required, it was earnestly recommended by the faculty that one should serve an internship in some hospital. As senior students, we were told that a year of internship was the equivalent of five years of general practice, and that two years of internship were the equal of 10 years of practice. Today, in Iowa, it is mandatory that the graduate in medicine must serve one year in an accredited hospital before he can begin practice.

As medicine progressed, the scientific knowledge of the cause and prevention and treatment of disease increased by leaps and bounds. Many of the diseases that were prevalent at the beginning of my practice have diminished to almost the vanishing point. I can count on the fingers of one hand all the cases of typhoid fever that came under my observation during this time, whereas in my father's practice when I was a boy, he always had one or more of them whenever, as one of his colleagues used to say, "People were disgustingly healthy." During epidemics, however, the doctors were greatly overworked, and I recall instances when I didn't see my father for days or even a week or more at a time.

I have lived to see the life expectancy of man increased from 35 years to the three score years and ten of the Psalmist. To the layman, let me say, this extension of life is what the medical profession and its allied institutions of research and patient care have done for him and his family. Epidemics which at one time decimated communities are practically unheard of today. The longevity of our senior citizens is no longer due principally to hereditary influences—to the stock from which they came—but in large measure is attributable to the prevention of disease and the lifesaving techniques that have been developed by the medical profession. The diabetic, once doomed to a short life, now carries on indefinitely, thanks to insulin and proper care. The victim of pernicious anemia, formerly sentenced to an early exodus, now lives in comfort and usefulness, thanks to our knowledge of the cause of the disease and the institution of proper treatment. Poliomyelitis has its back to the wall and is no longer a dread spectre in the home, thanks to the Salk vaccine. Pneumonia, once said to be "the friend of the aged," has taken far fewer lives since the sulfa drugs and the antibiotics came into use. The same is true of meningitis. Typhoid germs have been rendered innocuous, now that we have controlled the carriers, protected our foodstuffs, cared for our water supplies, and improved our methods of sanitation and vaccination. Syphilis, once a scourge, was brought into partial submission by arsenic and bismuth preparations, after the cause had become known, and was dealt a more lethal blow with the advent of penicillin. Tetanus is almost unheard of, as a result of the use of prophylactic vaccine.

Today every part of the human body is susceptible to surgery, thanks to modern operative techniques, the use of intravenous fluids including blood and blood plasma, improved anesthetics, the

antibiotics and various types of mechanical apparatus. Even the heart can be made to stand still during operations, by virtue of mechanical devices that provide extracorporeal circulation for the patient. More and more, the profession has become conscious of the importance of the pathologist, the physiologist, the roentgenologist and the biochemist as necessary adjuvants in the diagnosis and treatment of disease.

There were but a handful of specialists, figuratively speaking, when I located here in Des Moines in the summer of 1912. The eye, ear, nose and throat men predominated. There were a few surgeons, two psychiatrists who maintained a private institution, one internist, one consulting internist, one orthopedist, one roentgenologist, one dermatologist, one gastroenterologist, one urologist, one pathologist and one man who gave special attention to pulmonary tuberculosis. These physicians voluntarily limited their practices, for there were no specialty boards in existence. At that time, the DIRECTORY OF THE AMERICAN MEDICAL ASSOCIATION listed all physicians who were practicing in the United States or in its territories, and permitted the individuals to indicate, if they so desired, whether they limited their practices to particular specialties, or gave special attention to some branch of medicine. Nowadays, of course, a wide variety of specialists practice in the city, and listings in the present AMA DIRECTORY classify physicians as specialists only if they have been certified as such by one or another of the American boards. The roster of members of the Polk County Medical Society, as of January, 1960, designated 220 as specialists, 55 as general practitioners, and 23 as non-residents practicing general medicine. Thus, true specialization in medicine has come a long way in the past 47½ years since I first located in Des Moines.

During my professional life I have seen remarkable advances in the diagnosis and treatment of nervous and mental diseases. In the field of psychiatry alone, I have witnessed the change from custodial care of the insane to a restoration to usefulness of a majority of mentally ill patients. Beginning with metrazol and insulin as shock-producing agents, we have progressed to electroshock, which—especially in the emotionally disturbed patient—has brought about miraculous results in this field of medicine. Lobotomy, also, has played a role and has proved its usefulness in certain cases where other methods have failed. As a result of intensive research, new drugs have been placed in the hands of physicians to soothe and calm their mental patients, either as primary therapy or as follow-up after electroshock treatments. The age in which we live has produced jangled nerves in a goodly share of people—a condition little heard of in the days of the covered wagon and the horse and buggy.

Many other changes, too numerous to mention, have taken place in medicine since I began to practice, but I feel safe in saying that medicine has made more advancement during this half-century than it had in all of the preceding ages. In other words, the physician of my time has lived in the Golden Age of Medicine. What the future holds for the man of medicine is unknown, but judging the past by the present, I am sure that the medical profession of the future will reach far greater heights.

In the past 50 years, radical changes have taken place in our medical schools and hospitals. The Flexner Committee, in the early 1900's, started the campaign for standardization of medical colleges. Its action sounded the death knell of the inadequate stockholder schools and the "diploma mills" where anyone could buy accreditation. Over the years, a readjustment of teaching methods and entrance requirements for students has taken place. The physical properties of medical schools have increased enormously, full-time professors now fill most of the essential chairs, and now the student who aspires to take up medicine is required to have an academic degree as a prerequisite for admission, in most instances. Thus, the physician of today has spent four years in college, four years in medical school, and from one to two years as an interne in an accredited hospital, besides passing tests given by a state or national board of medical examiners, before he is permitted to begin the practice of his profession. Of the graduate who wishes to specialize and become a diplomate, three or more additional years of training are required. What a contrast with the time when anyone could announce himself a practitioner of the healing art and could hang out his shingle professing himself either a generalist or a specialist at will!

The patient, today, finds both a different kind of doctor and a different kind of doctor's office. Now, he finds a well educated and highly skilled physician, and instead of the primitive office filled with odors of various drugs and equipped with antiquated furnishings, he finds a modern, up-to-date establishment thoroughly equipped for his physical comfort as well as for the filling of his medical needs. In many instances he finds a group of physicians rather than just one man—an assortment of physicians who, because of the range of their specialties, can give expert consideration to his case from a variety of points of view, and can provide thoroughly adequate treatment.

Nevertheless, no matter how specialized he may be, no physician should ever forget that *the foundation of medicine rests on the fundamentals of general practice.*

There are several reasons for the decline in the numbers of general practitioners and the passing of the "family doctor." This decline, in my opinion, has come about largely because the well-trained physician feels that he cannot ably serve his patients unless he has access to a well equipped hospital. It is readily understandable that there are some communities which can't build and maintain hospitals. Such a locality cannot expect a physician

who has spent a minimum of nine years in preparation, and who has had the advantages of a good hospital during his training period, to locate there. Fortunately, with the advent of the automobile and improved roads, many of these communities, each of which was formerly served by a country doctor, can be cared for by centrally located physicians who have access to a county hospital or have built a private institution for themselves. Of course it is not the physicians alone who demand hospital facilities. The general public, having become well informed on medical topics and health matters, is likewise insisting on having the best in medical care. Such forward-looking folk see to it that none of the larger communities are deprived of competent physicians for lack of hospital facilities.

Again, the marked progress in the various fields of medicine has made it impossible for any physician to be skilled in all of its departments. If he attempts something beyond his ability and an unfavorable result occurs, he may find himself confronted with a malpractice suit which, if the verdict goes against him, may ruin his professional standing and leave him economically stranded. Thus, to protect himself as well as his patient, he is frequently obliged to get a specialist to attend patients whom a family doctor would have treated in earlier days, with no fault found if the outcome were disastrous. Likewise, if he were to fail to use laboratory aids in deciding upon diagnosis or treatment, when such tests are indicated, he might find himself in an uncomfortable situation. The laity is better informed on medical topics today than ever before, and people are quick to recognize whether or not they are receiving proper attention and care.

HEALTH COSTS ARE LOWER THAN GENERALLY SUPPOSED

The high cost of medical care is one of the topics one hears a great deal about. The complaints are most frequently voiced by individuals who see only the layman's side of the case or who feel that the physician or the hospital has taken undue advantage of some particular individuals. The medical care given to patients in the horse and buggy era was entirely different from that which is given in the age of the automobile and scientific medicine. One heard nothing of the "standard of living" or the "coffee break" or "overtime pay" or "pensions" when the horse was the chief method of travel over dirt roads. Then, the American dollar rang true for one hundred cents of value on the mercantile counters of the world! Then, the sick were cared for in the home, and the doctor, in many instances, not only was a man of medicine but frequently carried on the duties of a nurse as well. But the passage of time has wrought many changes.

So many demands are now made either on or by the hospital that it has become an institution where the cost of rendering service has soared enormously, and furthermore the dollar has steadily decreased in value until it is worth but half or less of its former valuation. The costs of medical care have risen, like all of the other costs of living, but still the net returns of physicians, as a group, are much less than are the earnings of many individuals in pursuits where education and training are not specifically required. In fact the businessman who "cleans up in the market" is lauded for his astuteness, but the physician who has a high-bracket income is often condemned by lay folk as a money-grabber. The public, ofttimes, is unaware of the many charitable acts rendered by physicians, and too often judges the profession by the actions of a few of its members who haven't conducted their practices according to the Oath of Hippocrates or the Golden Rule.

Frequently, the layman has taken the attitude that sickness or tragedy will befall only his neighbor, and he has made no provision for the day when misfortune may possibly occur to himself or to his family. Then, in his anguish, when health care bills confront him, he complains that the cost of medical care has ruined him financially. But what man who fails to insure his house against fire and other destructiive agents can expect sympathy when it is damaged or destroyed?

It was to avoid just such mismanagement on the part of some individuals and to aid the prudent ones that the hospitals and the medical profession brought out the Blue Cross and Blue Shield plans. Thus, millions of people are now covered by these or some other sorts of health and accident insurance protection.

One of the other complaints that I frequently hear is that the physician today ofttimes spends but little time on the patient's problem, tells him little or nothing about the medical findings, and in many instances, after seeing him for only a few minutes, shunts him into the hands of a nurse or a technician for treatment. Under these circumstances it is only natural that the patient gets the impression that he is no more than a product on an assembly line, and that the doctor is principally interested in the monetary side of medicine.

In contrast, the physician of bygone years usually spent a great deal of time with his patients. Unfortunately he had no precision instruments or laboratory aids to assist him in making his diagnoses. True, he had a watch, a thermometer and some type of stethoscope, but how far would a man get today with only those tools to help him in his professional duties? His chief stock in trade consisted of his skill, his judgment and his God-given senses. But let it be said to the credit of the old time practitioners that many of them cultivated their special senses far beyond the point that many present-day physicians reach. In fact, to my way of thinking, too much emphasis is now placed on laboratory findings for the making of a diagnosis, rather than on careful history-taking, a thorough examination of the patient and coordinated clinical findings, aided by such laboratory work as may be indicated. Some years ago a professor in one of our large medical schools voiced his fear of this radical trend in today's medicine. He told of

sending a private patient to a hospital where, to his dismay on looking over the chart, he found the intern had written about a dozen orders for various laboratory tests without having recorded the patient's history or given him a physical examination. Such a procedure is inexcusable. The old time country doctor, after looking at the patient's tongue and feeling his pulse didn't reach into the pill bag until he had asked and obtained answers to some questions.

THE "ART" OF MEDICINE MUST BE PRESERVED

It was in the field of personal relationships that the family doctor of old registered high with his patients and became beloved by those whom he served. He never was too busy to listen to their complaints or to counsel with them. It is unfortunate that in the hurry and bustle of life this once-precious contact between patient and physician has been almost lost. It has been said that it now takes about a dozen specilists to care for the family that formerly was served by just one family doctor. Progress will not permit the return of the horse and buggy days and the old country practitioner, but there is no reason why the close relationship between physician and patient cannot be reestablished. I have always considered it the highest compliment possible for a patient to place his health or even his life in my charge, and I have endeavored to render him the same service that I would expect if I were in his place. *This axiom was fundamental with the old time family doctor.*

What of medicine in the future? Only time will tell. Today, the American people are receiving the best medical care of any folk in the world. But the socialistic trend which is so evident today will undoubtedly have its effect on the practice of medicine tomorrow. To what extent the physician may become lazy and indifferent if his incentive to work is taken away, or if the wells of scientific research become dry as socialism engulfs the people, remains the unanswered enigma of today. We who have lived through a period when men enjoyed the freedom for which our forefathers fought, bled and died, and who are now enjoying the Golden Age of Medicine, can only hope for the best and trust that the banner of medicine will never be tarnished, lowered or stricken, regardless of what mankind does to the democracy which made our nation the greatest in the world and made American medicine without a peer.

Please Mark Your Calendar
ISMS ANNUAL MEETING
April 23-26, 1961
Veterans Memorial Auditorium
Des Moines

REHABILITATION DEPENDS ON PERSONALITY

It is the personality—not the disability—that is the key, in most cases, to success or failure in leading the handicapped back to useful, productive lives, Dr. William S. Moeller, an associate in psychiatry at S.U.I. told the annual conference for the Iowa Division of Vocational Rehabilitation, in Iowa City on January 19.

As an example of how the mind can sometimes defeat all efforts toward vocational rehabilitation, he cited the case of a young man who successfully completed physical rehabilitation and job training after an attack of polio. "This young man held 15 different jobs and all were marked by failure," Dr. Moeller said. "His failure was not related to his polio, physical rehabilitation or job training, but to his paranoid personality." Paranoia is a chronic, slowly progressive personality disorder characterized by the development of ambitions or suspicions into systematized delusions of persecution and grandeur, which are built up in logical form.

"Many people who seek training or other rehabilitative processes do so only to prove to their relatives, to their friends and to the world that they *cannot* do these things, and the outcome is bound to be failure," Dr. Moeller declared.

"It thus is necessary to build rehabilitation upon a complete understanding not only of the person's physical complaints but also of his emotional life," he asserted.

Psychosomatic patients can usually be divided into three categories, he said. One type suffers from so-called "functional" disorders—i.e., they have various physical symptoms but no bodily disease to serve as a cause for the symptoms. In a second type, a physical disease is present, but the original causative factors were emotional. The resulting condition can reach a point where it is no longer reversible. In a third type of psychosomatic disorder, the patient does have actual organic disease, but certain of his symptoms do not arise from that disease, but from mental factors—perhaps from anxiety arising from situations in relation to other persons. In disorders of this kind, Dr. Moeller said, the emotional disability is often out of proportion to the physical disease. "Of the three, it is far the most difficult to establish a relationship with the patient who has physical symptoms but no bodily disease to account for the symptoms," he said.

Because the physician has difficulty explaining a functional disorder, the patient has difficulty in accepting it. In these cases, according to Dr. Moeller, it is most helpful to begin by letting the patient explain his symptoms. "As the patient begins to feel that the physician, as a counselor, is really interested in his point of view, he will more freely divulge the hidden feelings and attitudes which provide valuable diagnostic, treatment and rehabilitative clues," he concluded.

STATE DEPARTMENT OF HEALTH

COMMISSIONER

A CASE STUDY OF VENEREAL DISEASE

The following case involved 32 people and was first brought to the attention of the Health Department by a 28-year-old male who reported to the clinic in June with gonorrhea. He named his steady girl friend, 24 years old, and an 18-year-old pick-up. The steady girl friend was infected.

The 18-year-old pick-up was located through the combined efforts of the Health Department and the sheriff's office. By that time, commitment papers had been signed by her parents to authorize psychiatric evaluation of her at Broadlawns General Hospital, Des Moines. She was examined, treated and interviewed, and the names of five more contacts were obtained.

At this time, the local police department made a raid on a beer party at a gravel pit, which netted two boys aged 19 and 20, and three girls aged 17 and 18. The two boys were contacts of the first 18-year-old, and also of the three girls who were arrested with them. All were infected. The 17-year-old was sent to the Girls' Training School at Mitchellville, and one of the 18-year-old girls was pregnant. The group named six other boys and four other girls. The 17-year-old gave indications of possibly being under the influence of a narcotic. Further investigation revealed that one of her contacts had been picked up at about the same time for possession of morphine. He was located, and was found to be infected. He named only the girls already treated and one other 15-year-old who had been named by the other two boys. This youngest girl was located and found to be under treatment by a private physician. A 20-year-old male was named who was under arrest in Kansas City, Missouri, on a charge of "possession of stimulating drugs." He was located and found to be infected, and when he was interviewed he revealed the names of four girls. Three of them had been located, and the fourth, a 21-year-old, was found in county jail on a charge of embezzlement. She was found to be infected and was treated. When interviewed, she named only two of the boys already known to the investigators, but admitted she was in this group.

Fourteen days after the first beer party, another raid was made at the same place, and 12 people were apprehended. This time four of the original party and eight others were present. Eleven of them were found to be infected. Other contacts whom these people named were located, examined, and if necessary, treated.

The total estimated cost of this problem in delinquency, including not only venereal disease investigation and treatment but also the police investigation, court costs, subsistence in county jail, the cost of institutionalizing some of the individuals, projected ADC costs for illegitimate children, etc., is $92,211.00. This represents an ultimate cost to the taxpayer of about four cents out of every tax dollar collected in Polk County, Iowa, for 1960. It also represents about 75 per cent of the total budget of the Des Moines Recreation Department for the year.

This study of one series of associated cases of venereal disease was recently prepared by the staff of the Des Moines-Polk County Health Department, Division of Communicable Disease Control. It is presented here for two reasons—first as a report to indicate effective case-finding and treatment of venereal disease patients, and second, to show clearly that very frequently venereal disease control is a problem that extends far beyond the proper field of activity of a health department. This problem, for example, involved many different official groups in Des Moines and Polk County, including the Police Department of Des Moines, the Polk County Sheriff's Office and the local courts. Beyond the County, it involved the State Narcotics Control Division, the State Department of Health, the State Board of Control, the ADC Division of the Department of Social Welfare, and the government of at least one neighboring state.

Perhaps the old term "social disease" for this type of condition was a well-chosen one after all, for it involves much more than the physical health of the persons immediately concerned.

INFECTIOUS HEPATITIS

Infectious hepatitis, commonly called yellow jaundice, is caused by a virus spread directly or indirectly from person to person. Infection usually enters the body by way of the digestive or the respiratory tract. It can be either a mild or a severe illness, and it attacks persons of any age. Symptoms include nausea, tiredness, muscular pains, fever and abdominal distress. Jaundice may or may not be present. It is least often present in

younger children. Most cases have an incubation period of from three to four weeks.

PRECAUTIONS TO BE OBSERVED BY SCHOOL PERSONNEL

The following instructions are being urged upon school custodians, food-handlers, teachers and pupils.

Lunch Room. Store food to protect it from rats, mice, roaches and flies. Use sanitary food-handling methods in preparing and serving food, and in disposing of waste foods. Wash dishes and utensils, immerse for a half-minute in boiling water or for two minutes in 170° water, air dry and store in a clean place. Do not work as a food handler if you are ill, or possibly ill, with any communicable disease.

Drinking Fountain. Let the water come up to you. Have the fountain equipped with a projected, slanting jet. Keep your mouth and hands off the drinking jet. Have the fountain the right height, or place a box for small children to stand on, or have each child use his own drinking cup, if paper cups cannot be made available. Have drinking water kept in a covered container if there is no available running water. Have your water supply tested.

Hand Washing. Wash your hands after going to the toilet, and before eating or preparing or handling food. Use soap and water, and rinse your hands under running water, either from the faucet or by pouring water from a pitcher into a bucket. Dry your hands. DO NOT USE A COMMON HAND TOWEL! Keep your nails clipped to a proper length, and keep them clean.

Body Wastes. Germs causing disease are to be found in all body wastes. Keep the toilet clean, and if it is an outhouse, screen it against flies, make the pits rodent and fly tight, don't permit the contents of the pits to overflow, provide seat covers of the self-closing variety, wash the seats often, and use slacked lime once a day for a deodorant and disinfectant. Have toilet seats of the right height for children.

Secretions From the Nose and Mouth. Use tissues to receive such material, and deposit them in the wastepaper basket, or use your own handkerchief. Cover your nose and mouth when coughing or sneezing. Keep your hands away from your mouth. Keep objects such as pencils and crayons out of your mouth.

REMINDERS TO PHYSICIANS

If the first case of infectious hepatitis in a family is neglected, the chances are that 20 per cent or more of the other family members will contact the disease. About one per cent or less of the family or other close contacts who are given gamma globulin develop infectious hepatitis.

Only a few of the cases that occur are diagnosed. Many of the diagnosed cases are not reported to the State Department of Health, yet the numbers of cases reported in Iowa increased yearly from 17 in 1950 to 3,619 in 1954. For that latter year, we reported the highest case rate of any state in the Union. Since then, a reduction of incidence occurred both locally and nationally until 1958, but beginning in that a year a nationwide increase has again occurred. In Iowa, there were 201 cases in 1958; 167 in 1959; and there had been 380 in 1960 up to November 12.

Following are the Iowa rules and regulations, as changed in 1954:

1. The patient must be isolated for the entire period of clinical illness, rather than just for one week.

2. Familial and other contacts of infectious hepatitis patients may not return to school or to their work as food handlers or teachers until they can present signed statements from physicians as evidence that they have been given prophylactic gamma globulin or some other equally effective prophylactic material.

3. Contacts not receiving gamma globulin or other equally effective material are to remain away from school or from their work as food handlers for (a) three weeks beyond the period of clinical illness of the case, if they have remained in contact with the patient, or (b) three weeks after their last contact with the patient.

FREE GAMMA GLOBULIN IS VERY SCARCE

Our gamma globulin remains in short supply. The gamma globulin distributed by the State Department of Health is obtained on a quarterly allocation basis from the American Red Cross. The amount sent to Iowa and to other states is actually determined on a population basis, and it permits barely enough for infectious hepatitis control limited to patients' families and others of the patient's immediate contacts whom the physician certifies as medical hardship cases. The State Department of Health has no gamma globulin for use on a school, class or community basis.

HEPATITIS PEAK PREDICTED

Infectious hepatitis may reach a new high in the U. S. during 1961, surpassing even the 1954 record of 50,000 cases.

This warning comes from Dr. Alexander D. Langmuir, chief epidemiologist of the Public Health Service's Communicable Disease Center, Atlanta, Ga. Hepatitis, he notes, surged beyond the 41,000 mark in 1960 and there's a chance the trend will continue. Physicians may expect their case loads to be particularly heavy through February and March.

Although hepatitis has been a health problem for years, its history in the U. S. was rather obscure until 1952 when it was finally added to the list of nationally reportable diseases. Since then its significance has become increasingly apparent.

For example, the disease appears to ebb and flow in cycles of six or seven years. From the

17,428 cases reported in 1952, the curve rose sharply to 50,093 in 1954. Then it turned downward again during the next three years, hitting a low of 14,922 cases in 1957. It climbed again steadily through '58-'59, reaching to more than 41,000 in 1960.

"In our own group, we are divided about half and half over whether 1960 or 1961 will turn out to be the new peak year," Dr. Langmuir told MEDICAL WORLD NEWS. "I lean to 1961; I wouldn't be surprised to see 60,000 cases reported. A hint of this possibility can be seen in the fact that the third-quarter figures for 1960 exceeded those of the same period in 1953, immediately preceding the 1954 high."

In 1960, attack rates were relatively high in the Mountain, Pacific and East South Central regions, and low in New England. Colorado, Kentucky and Tennessee were especially hard hit. But, in general, there appears to be no definite geographical pattern.

There is an age pattern, however. The five- to 19-year-old group is definitely hardest hit. In Tennessee, for instance, a study of 548 cases in 1959 showed that the greatest incidence—43.4 per 100,000—was in this age group. Other rates ranged from 29.4 for children 10-14, down to only 9.7 for adults and 8.1 for children under five.

Despite the attention they have received recently, neither water-borne nor food-borne outbreaks are a major part of the total problem. Water-borne outbreaks may have been caused mainly by gross contamination of water supplies by sewage. Food has been suspected as the source in a few outbreaks—notably 50 cases among University of Florida students which were linked to a particular cafeteria. But a definite association has not yet been proved.

In the case of serum hepatitis, Dr. Langmuir concedes there are no satisfactory figures. Serum and infectious hepatitis are lumped together in the state health department reports. An attempted breakdown by California suggests a serum hepatitis incidence of two to six per cent of the total case load.

"We do think, however, that infectious hepatitis accounts for the large majority of cases, but serum hepatitis causes most of the deaths," he comments. "The mortality statistics, for example, suggest this. Hepatitis mortality holds steady at a low level year in and year out, regardless of the epidemic or cyclical patterns of infectious hepatitis. Thus there is reason to believe that the deaths in the main reflect serum hepatitis."

Although some authorities believe serum hepatitis has been on the rise—along with increasing use of blood products—Dr. Langmuir thinks that the mortality picture and other factors indicate it is actually holding steady. The current surge of cases is attributable to infectious hepatitis.

—MEDICAL WORLD NEWS, Jan. 20, 1961, pp. 22-23.

MORBIDITY REPORT FOR MONTH OF DECEMBER 1960

Disease	Dec. 1960	Nov. 1960	Dec. 1959	Most Cases Reported From These Counties
Diphtheria	1	1	0	Polk
Scarlet fever	165	150	153	Jefferson, Johnson, Polk, Woodbury
Typhoid fever	0	2	0	
Smallpox	0	0	0	
Measles	103	117	396	Dubuque, Linn
Whooping cough	18	8	23	Polk, Pottawattamie
Brucellosis	11	13	21	Dubuque
Chickenpox	895	427	332	Dickinson, Linn, Polk
Meningococcic meningitis	1	0	1	Cerro Gordo
Mumps	350	301	160	Dubuque, Linn, Polk, Story
Poliomyelitis	0	1	2	
Infectious hepatitis	64	26	25	Guthrie, Polk, Pottawattamie
Rabies in animals	15	12	18	Clinton, Scott
Malaria	1	0	0	Hancock (contracted outside U. S.)
Psittacosis	0	0	1	
Q fever	0	0	0	
Tuberculosis	43	28	41	For the state
Syphilis	93	69	61	For the state
Gonorrhea	145	94	73	For the state
Histoplasmosis	0	0	17	
Food intoxication	30	0	0	Dubuque (delayed reports)
Meningitis (type unspecified)	1	1	8	Polk
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	2	Carroll
Salmonellosis	1	5	2	Scott
Tetanus	0	0	3	
Chancroid	0	1	1	
Encephalitis (type unspecified)	0	0	1	
H. influenzal meningitis	0	1	2	
Amebiasis	0	0	2	
Shigellosis	2	1	3	Black Hawk, Howard
Influenza	77	59	2	Clay, Dickinson

CAMP FOR DIABETIC CHILDREN

For the thirteenth year, a summer camp for diabetic children will be conducted under the auspices of the Chicago Diabetes Association at Holiday Home, Lake Geneva, Wisconsin, from July 16 through August 6. Boys and girls from eight through 14 years of age are eligible. Resident physicians, a nurse, two dietitians and a laboratory technician will be on duty, in addition to the regular counseling and domestic staff. Charges are based on ability to pay.

Inquiries should be addressed to the Association, at 620 North Michigan Avenue, Chicago 11.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Living to witness a new year unfold usually inspires one to do some soul searching. This becomes evident to our friends when we make new resolutions. What would happen in our churches, our communities, our country, if all of us believed: "All that we send into the lives of others, comes back into our own." If we really believed it, we would practice it. If we practiced it, surprising things might happen.

The truth of this was obvious to me during the month of December. Amazingly enough, the "income" was so much greater than the "out-go." Receiving abundant good wishes from Auxiliary members all over the country was certainly exciting. No queen could be more elated or honored at this shower of greetings. My thanks to all of you!

One card should be singled out for special commendation. This card was mailed to Polk County Medical Society members, and was extremely attractive. Other Auxiliaries may care to adapt Polk's plan of card exchange and thus to find themselves financially capable of supporting their favorite charity. Polk County will be happy to share details of the scheme with you.

Auxiliary-wise, my most thrilling, real-life experience was that of attending the "first anniversary" party of Buchanan County. Sue Gerken and I were special guests at a favorite-dish supper party. The membership of the Buchanan Chapter is now 24, and 23 of the ladies were present. If statistics are unimpressive, perhaps a direct quotation from Mrs. Korson's letter will be meaningful: "As you observed when you were with us, each member in Buchanan County dearly loves her Auxiliary. Whatever we do as Auxiliary members is a work of love. We are proud to be a part of the State Auxiliary." Our very sincere congratulations go to Mrs. Korson and her associates for their achieving this milestone. When life is dedicated to growth and to contribution, life becomes meaningful and radiant.

LILLIAN NIELSEN
President

TAKE NOTE

"When small men begin to cast long shadows, it is a sure sign the sun is setting."

Too many very small men are casting deeply black shadows across America today.

★ Small minded businessmen, more interested in making an easy dollar by manipulation than a harder dollar by producing values.

★ Petty politicians who act as though they RULE the people rather than serve them.

★ Selfish labor leaders more interested in power than in America, even though their greed brings high costs, destructive inflation, deadly depression.

★ Greedy people in many walks of life, who want THEIR areas, THEIR special interests supported by all taxpayers, when they ought to be paying their own bills.

Long shadows like these will continue to grow until the entire country is in eclipse, unless the REAL people, who do the work and pay the taxes, wake up to their responsibility and opportunity. By voice and vote, they can take their country back again, and insist on honest values once more, greater public integrity, and hard work so that everyone will earn what he gets. And we had better DO it, before the sun sets!

—Published by Warner Swasey Company of Cleveland, Ohio

MEETING YOUR MEMBERS

Candidate No. 7
Mrs. S. P. Leinbach

From Belmond, Iowa, hails a lady fair who insists her chief struggle is the "battle of the bulge." If you could see and know her, you would know hers is the victory. Did any of you suspect this? Mrs. S. P. Leinbach is a perennial Sunday school teacher; serves in the fields of community betterment, Civil Defense and Woman's Club, and is active in various areas of Auxiliary work.

We cannot enumerate all of her talents and her endeavors, but if you could meet and know her, you would immediately feel her charm.

This ash blond
With grey-green eyes,
Is one in whom
Great talent lies.

She sings and plays
To earn her fame.
You know Bach
Is part of her name.

To all the football
Games she goes,
And basketball
She also knows.

And reading is
A special pet
With all these loves
We're not through yet.

Children four
Whom she adores,
And then the League
Of Women Voters.

The P. T. A.
And Sunday School too,
Part of her time
To them is due.

COUNTY AUXILIARIES

Buchanan County

It is typical of any mother to praise her children. My "first born child," the Buchanan County Auxiliary, celebrated her first birthday on December 15 in the Korson apartment at the Mental Health Institute, Independence. The occasion involved much elegant food, radiant company, a Christmas program, and a large decorated birthday cake centered with one large candle. How many children one year old can manage their own party so completely that mother is free to just enjoy herself? Certainly this pride is justifiable.

One year as an Auxiliary has meant 12 meetings. Nearly $169 was raised by having a community card party. Both men and women could buy tickets. Mrs. Mochal proved to be a very efficient chairman. The members served homemade sandwiches, relishes, and coffee. There were door prizes. Reports were rampant that everyone has so much fun, they hope it will be an annual event in their community.

One of the Buchanan County members, Mrs. White, is aiding the ceramics program at the hospital. Some of her original ceramic work was given for first prize.

When the birthday party was over, plans were made for gifts to be given to 36 children at the hospital. This is a splendid Auxiliary!

L. P. N.

Grundy County

On December 7, the Auxiliary to the Grundy County Medical Society met at the home of Mrs. H. L. Mol, to honor Mrs. L. E. Frink. The table was decorated in the Christmas motif with evergreen sprigs and red candles on a white tablecloth. Dr. and Mrs. Frink and four small sons are leaving for Long Beach, California, where Dr. Frink plans to enter the field of radiology. The Auxiliary presented Mrs. Frink with a traveling case.

Mahaska County

The monthly luncheon meeting of the Mahaska County Medical Auxiliary was held at the Downing Hotel, on Tuesday, January 10. Eight members were present, with Mrs. Kenneth Lemon presiding.

Following luncheon, Mr. Morris Bandy, field secretary for ISMS, explained some of the legislation of interest to organized medicine, and the State Medical Society's attitude toward the medical assistance program for the aging in Iowa.

WHY BE AN AUXILIARY MEMBER?

How Better Can You Show the World That You Stand Side by Side With Your Husbands?

For your common good, and that of your husbands, band together in work, in play, in understanding and in friendship.

IN WORK—As a group, you become known for the help you give your husbands in their efforts to better the health of your communities.

In PLAY—As a group—Auxiliary members and husbands—you become friends and learn to admire and respect each other as individuals, not just as physicians and physicians' wives.

IN UNDERSTANDING—As a group, you learn to know about the problems confronting the medical profession, your communities, your state and your nation, and to help in the solution of them.

IN FRIENDSHIP—As a group, you strengthen your unity and your own lives by loyalty and devotion you learn to have for each other.

WHY be an Auxiliary Member? The above should be reason enough for organizing an Auxiliary in your county if you have not already done so. Becoming a member-at-large, if you live in a small county, is one step nearer to an organized Auxiliary and indicates your support.

AMERICAN MEDICAL EDUCATION FOUNDATION

A.M.E.F. is a priority project emphasized by the national Auxiliary. This should be considered in plans for your Auxiliary after you adapt your projects and activities to meet the needs and program of your own medical society and community. To help doctors in every way possible to maintain the private practice of medicine and the American free enterprise system is a chief objective of the Auxiliary.

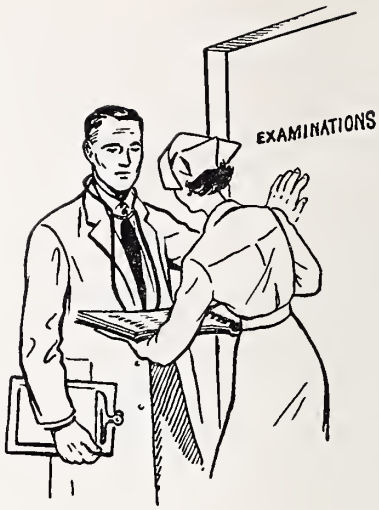
The private support given to our medical schools is of great importance in the effort to maintain the American way. Your contribution as an individual or as an Auxiliary may be through use of Sympathy, Appreciation, and Utility Cards, or the A.M.E.F. note paper.

Your state chairman, Mrs. R. W. Driver, 1076 Prospect Boulevard, Waterloo, Iowa, is waiting to hear from you.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls
President-Elect—Mrs. B. F. Kilgore, 5434 Woodland, Des Moines 12
Secretary—Mrs. L. F. Henderson, 304 Seerley Street, Cedar Falls
Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12
Editor of THE NEWS—Mrs. W. W. Sands, 1515-41st Street Place, Des Moines 11

THE DOCTOR'S BUSINESS



Income Tax Savings In an Estate

HOWARD D. BAKER
WATERLOO

In an era of high income taxes, spendable income is more important than income before taxes. Three major factors determine spendable income available to the beneficiaries of an estate. These are: (1) Amount of property involved. (2) Amount of net income that the property will produce. (3) The amount of income taxes that will be collected on the income produced.

Most individuals are aware of the high level of federal estate taxes, once an estate exceeds the allowable exemptions. Unfortunately, plans for saving income taxes after an individual's death are not so well understood. Income tax savings may be of greater importance to the beneficiaries of an estate than the estate tax savings that may be effected under an estate plan.

We all recognize that income taxes can be reduced if any given amount of income is divided among two or more persons. Therefore, a will can be used to split the income and thus lower the subsequent income tax.

For example, Dr. X has a wife and two children, and it is estimated that his estate will produce an annual income of $12,000 after his death. If the entire income were paid to Mrs. X, her annual federal income tax would be about $2,370. Under this arrangement, although a large portion of the income would be used for the support of her children, it would be taxed entirely to one individual.

Rather than to leave his wife the total income, assume that it is practical for Dr. X to arrange for $1,000 per year to be paid to each of the children outright, and for $750 per child per year to accumulate in a trust. Under this plan Mrs. X's income would be reduced to $8,500, and her tax to $1,450. Each child would pay $62 tax, and the trusts would pay $130 tax per child. Thus, the total tax bill on the $12,000 income would be $1,834, and the annual tax savings would be $536.

In most cases, the principal objective of a husband's will is to provide maximum protection for the wife. However, if an estate is likely to produce more income than the wife will need, it is logical that the surplus income should be removed from her top tax bracket and taxed to other beneficiaries in the lower brackets.

PLANNED USE OF PRINCIPAL

In some specific cases, planned use of principal can save income taxes. Consider the case of Doctor A. The annual income from his estate is $40,000. In the event of his death, he would like his wife to have the benefit of the entire income, but would also like to minimize her income tax burden. Under his will, he divides his estate into two equal parts; one of these parts is left in trust for his wife and the other part divided into separate trusts for his children. The income from Mrs. A's trust ($20,000) is to be paid to her. The same amount of income is to be accumulated in separate trusts for the minor children. However, in order to offset the economic loss to Mrs. A of having half of the income accumulated for her children, the will provides that she may withdraw a specified sum of principal from her trust each year. The trustee is also given discretionary power to pay additional principal to her in the event of need.

In this case, Mrs. A will be taxed on only $20,000 of trust income, instead of on the entire $40,000. Since she has the right to principal which is not subject to tax, Mrs. A can be given the same, or a greater amount, of spendable income than she would have received had she the right to the entire income.

As is the case with other estate matters, one should take action on such arrangements only after a thorough study of the content and purpose to be accomplished by your estate, and then with the guidance and counsel of your estate attorney.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

THE Journal OF THE IOWA STATE MEDICAL SOCIETY

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MARCH, 1961

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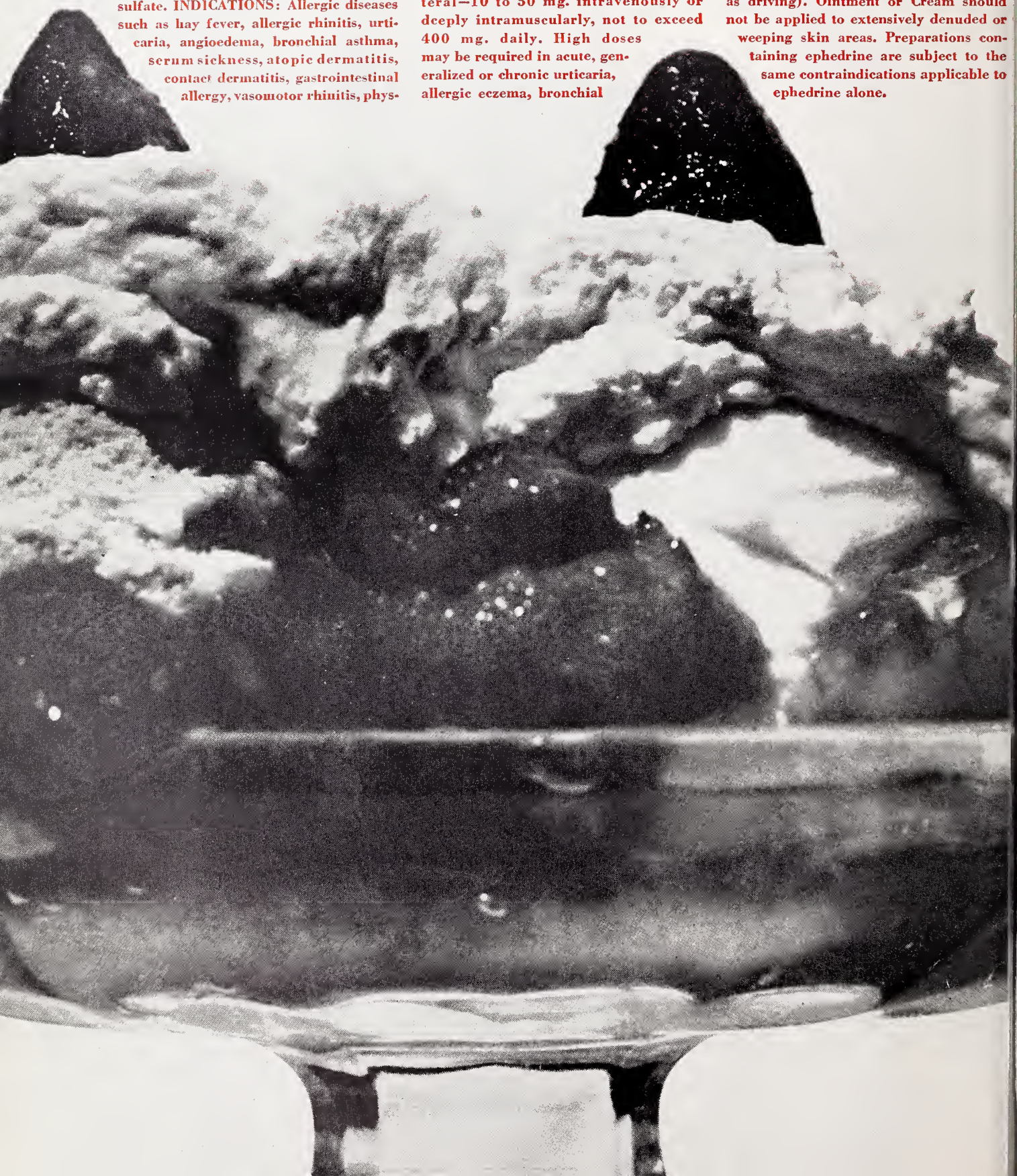

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Journal of the IOWA STATE MEDICAL SOCIETY

Vol. LI MARCH, 1961 No. 3

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Daniel A. Glomset, M.D.....Des Moines
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IOWA STATE MEDICAL SOCIETY

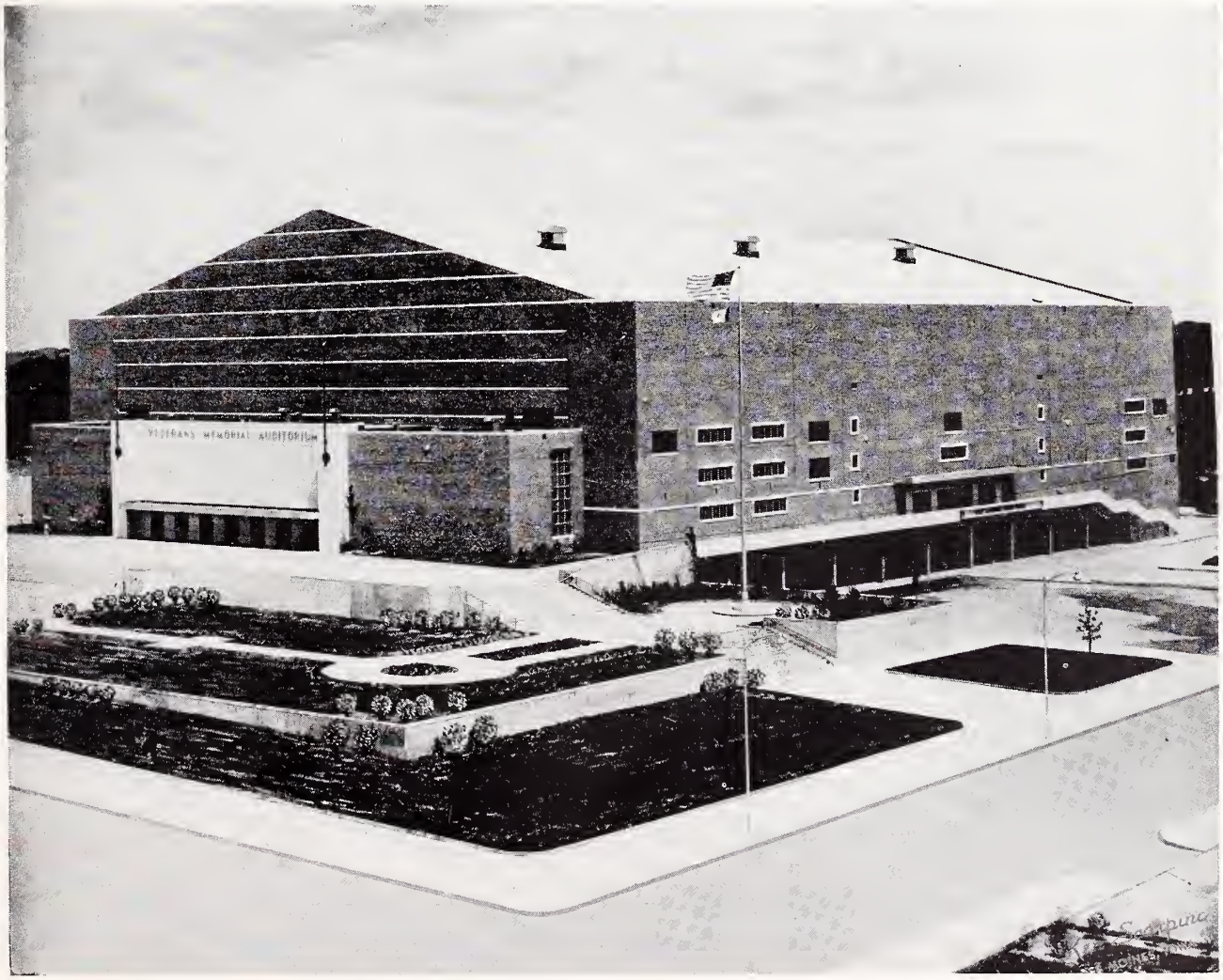
Organized in 1850

1961 ANNUAL MEETING

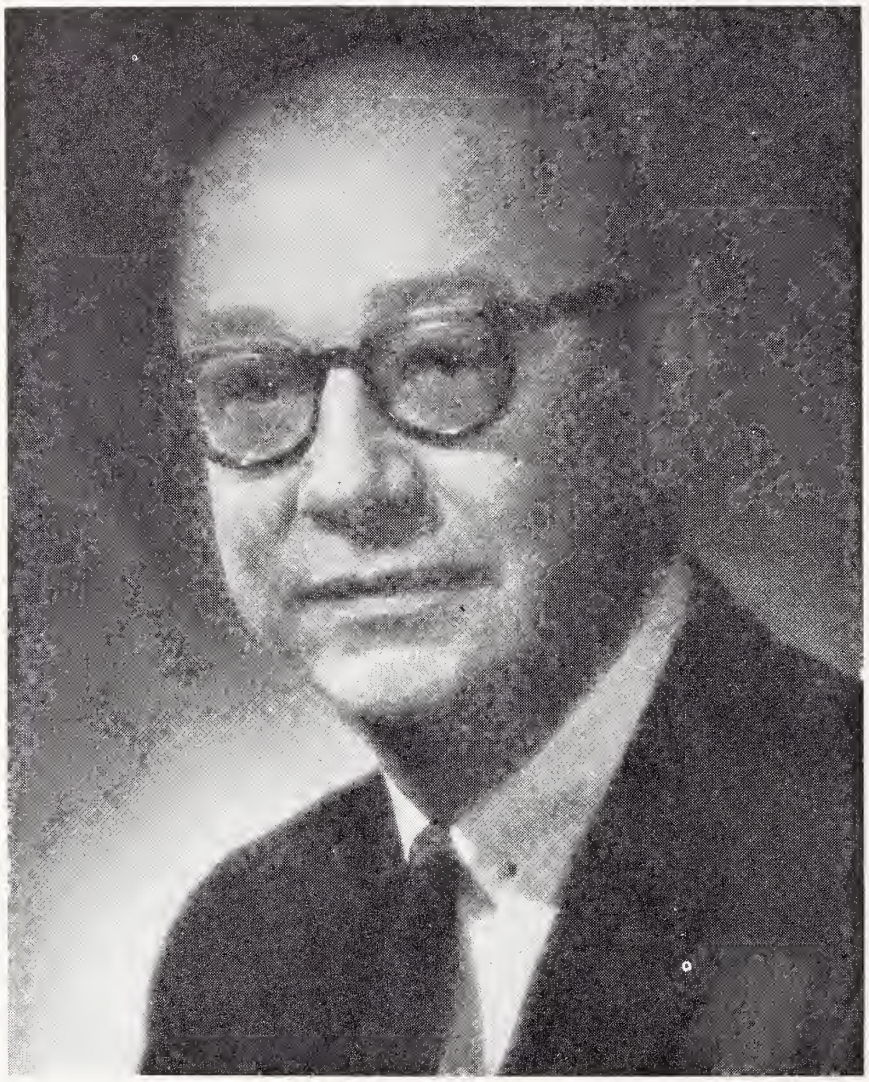
April 23-26

Veterans Memorial Auditorium

Des Moines



Veterans Memorial Auditorium



EUGENE F. VAN EPPS, M.D.
President
Iowa State Medical Society
1960-1961

General Sessions

General Sessions Room, Exhibit Hall

Monday Morning, April 24

AUTOMOTIVE SAFETY

8:00 Exhibits

8:55 Invocation

Monsignor Lester V. Lyons, pastor, St. Ambrose Cathedral, Des Moines

9:00 Introductory Remarks

Carl H. Pesch, Des Moines, Commissioner of Public Safety for the State of Iowa

9:15 Panel Discussion: The Crash

Russell I. Brown, Washington, D. C., president, Insurance Institute for Highway Safety—Moderator

Horace Campbell, M.D., Denver, Colorado, chairman, Automotive Safety Committee, Colorado State Medical Society

B. J. Campbell, Ph.D., New York City, assistant to the director, Automotive Crash Injury Research Project, Cornell University

J. H. Mathewson, Los Angeles, California, assistant director, Institute of Transportation and Traffic Engineering, University of California at Los Angeles

Karl M. Richards, Detroit, Michigan, manager, Field Services Department, Automobile Manufacturers Association

10:45 Exhibits

11:30 "The Driver and Legislation"

William F. Burnett, Des Moines, director, Safety Education Division, Department of Public Safety for the State of Iowa

12:10 General Discussion

12:30 Lunch Recess

Monday Afternoon, April 24

2:00 Introductory Remarks

Norman A. Erbe, Boone, Governor of the State of Iowa

Panel Discussion: Alcoholism and Driving

Mr. Pesch—Moderator

Dr. Horace Campbell

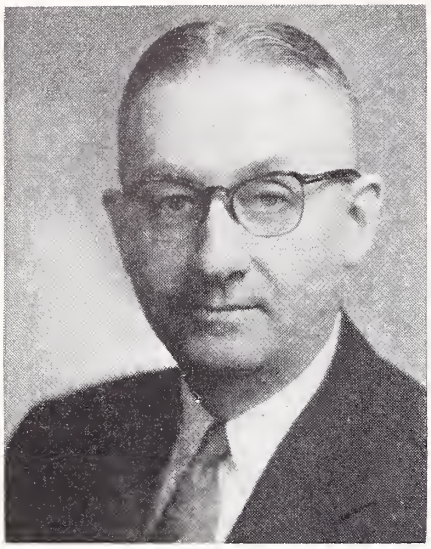
Richard L. Holcomb, Iowa City, associate professor and chief, Bureau of Police Science, State University of Iowa

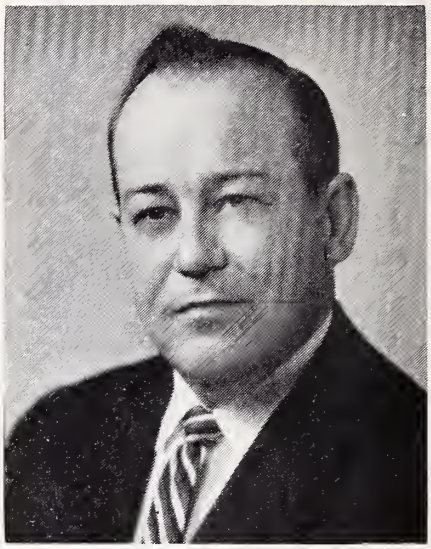
William N. Plymat, Des Moines, president, Preferred Risk Mutual Insurance Company

3:15 Exhibits

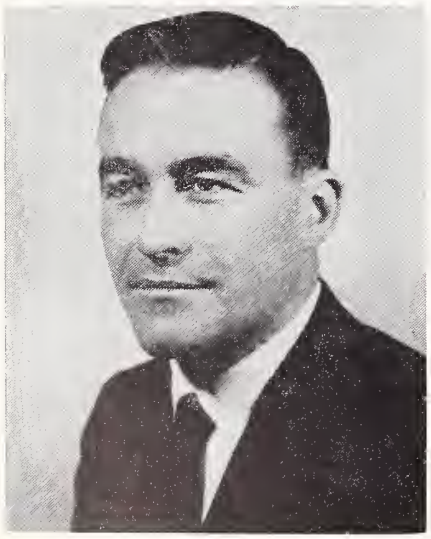
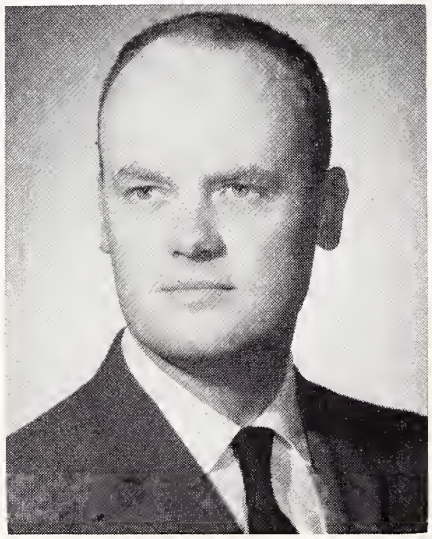
4:00 "Research Projects in Automotive Safety"
Dr. B. J. Campbell

4:30 "A Driving Simulator"
Professor Mathewson





(Left) ***F. J. L. Blasingame, M.D.****, Chicago, Illinois, executive vice-president, American Medical Association. (Center)* ***Michael Bonfiglio, M.D.****, Iowa City, associate professor of orthopedic surgery, College of Medicine, State University of Iowa. (Right)* ***Russell I. Brown****, Washington, D. C., president, Insurance Institute for Highway Safety; member, Board of Directors, National Safety Council; special consultant to the Public Health Service, Department of Health, Education and Welfare.*

(Left) ***William F. Burnett****, Des Moines, director, Safety Education Division, Department of Public Safety for the State of Iowa. (Center)* ***B. J. Campbell, Ph.D.****, New York City, assistant to the director of the Automotive Injury Research Project, Cornell University. (Right)* ***Horace E. Campbell, M.D.****, Denver, Colorado, chairman, Automotive Safety Committee, Colorado State Medical Society; member, Colorado Citizens Traffic Safety Committee and Committee on Alcohol and Drugs, National Safety Council.*

General Sessions (Continued)

Tuesday Morning, April 25

8:00 Exhibits

9:00 "How to Examine the Back"—Discussion and Demonstration

Michael Bonfiglio, M.D., Iowa City, associate professor of orthopedic surgery, College of Medicine, State University of Iowa

10:30 Exhibits

11:15 "The Status of the Pre-Employment Examination—Its Value to Employer, Employee and Insurance Carrier"

Billie H. Shevick, M.D., Moline, Illinois, industrial physician, Deere and Company

11:45 "The Evaluation of Disability"

Fred Reynolds, M.D., St. Louis, Missouri, professor of orthopedic surgery, Washington University

12:30 Lunch Recess

Tuesday Afternoon, April 25

2:00 President's Address

Eugene F. VanEpps, M.D., Iowa City

2:15 Erskine Memorial Lecture "Pathomechanics of Backache"

Carroll B. Larson, M.D., professor and head, Department of Orthopedic Surgery, College of Medicine, State University of Iowa

3:00 Exhibits

3:45 "Conservative and Operative Treatment of Backache"

Dr. Reynolds

Wednesday Morning, April 26

8:00 Exhibits

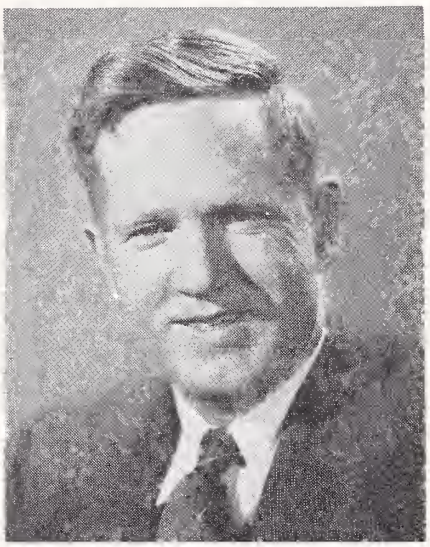
Special Address

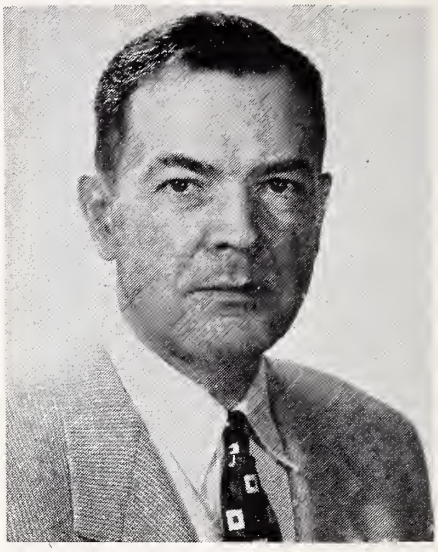
F. J. L. Blasingame, M.D., Chicago, Illinois, executive vice-president of the American Medical Association

(Dr. Blasingame will speak immediately following adjournment of the House of Delegates)

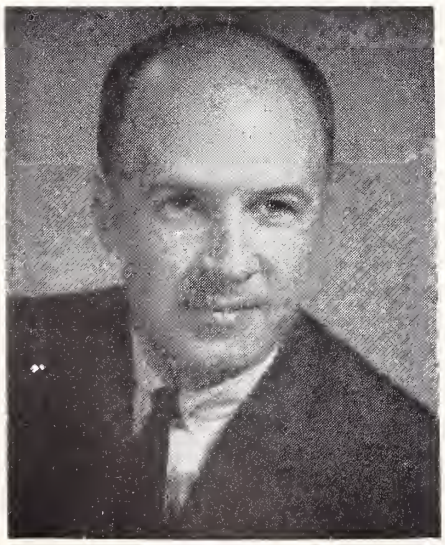
11:30 Report of the House of Delegates

Installation of the President of the Society





(Left) ***Richard L. Holcomb****, Iowa City, associate professor and chief, Bureau of Police Science, State University of Iowa; member, Committee on Alcohol and Drugs, National Safety Council. (Center)* ***Carroll B. Larson, M.D.****, professor and head, Department of Orthopedic Surgery, College of Medicine, and director of the Rehabilitation Unit, University Hospitals, State University of Iowa. (Right)* ***J. H. Mathewson****, Los Angeles, California, assistant director, Institute of Transportation and Traffic Engineering, University of California at Los Angeles.*



(Left) ***Carl H. Pesch****, Des Moines, Commissioner of Public Safety for the State of Iowa. (Center)* ***William N. Plymat****, Des Moines, president, Preferred Risk Mutual Insurance Company; member of the Iowa bar; member, Committee on Alcohol and Drugs, National Safety Council. (Right)* ***Fred Reynolds, M.D.****, St. Louis, Missouri, professor of orthopedic surgery, Washington University.*

Special Meetings and Dinners

Sunday, April 23

GOLF TOURNAMENT

The Annual Golf Tournament will be held in Des Moines on Sunday, April 23, and reservations should be made with Doctor Harold J. McCoy, 212 Bankers Trust Building, Des Moines. Further information regarding the Golf Tournament will be published in the April issue of the JOURNAL.

Monday, April 24

INTERNAL MEDICAL SPECIALISTS

Terrace Room—Hotel Savery

Social Hour—6 p.m.; Dinner—7 p.m.

Reservations: Daniel A. Glomset, M.D.

2932 Ingersoll Avenue, Des Moines

IOWA ACADEMY OF GENERAL PRACTICE

Des Moines Room—Hotel Savery

Cocktails—6 to 8:30 p.m.

All General Practitioners and their wives are invited to attend. Tickets will be sold for $1.00 per person.

Attend the
PRESIDENT'S RECEPTION
and
ANNUAL BANQUET

Tuesday, April 25—Hotel Savery

Reception, 6 p.m.—Des Moines Room

Banquet, 7 p.m.—Terrace Room

(Blue Shield is arranging the reception in honor of Eugene F. Van Epps, M.D., ISMS President.)

IOWA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Wakonda Club

Business Meeting—6 p.m.

Social Hour and Dinner—6:30 p.m.

Reservations: C. C. Woodburn, Jr., M.D.

1421 Woodland Avenue, Des Moines 14

IOWA ACADEMY OF SURGERY

Wakonda Club—Main Floor

Business Meeting—5 p.m.

Social Hour—7 p.m.; Dinner—8 p.m.

Guest Speaker: Mr. J. V. Rowe, Waterloo, Iowa

Reservations: Alfred N. Smith, M.D.

1407 Woodland Avenue, Des Moines 14

IOWA ASSOCIATION OF PATHOLOGISTS AND IOWA SOCIETY OF MEDICAL TECHNOLOGISTS

Hermitage Room—Des Moines Club

Social Hour and Dinner—6:30 p.m.

Reservations: F. C. Coleman, M.D.

Mercy Hospital, Des Moines

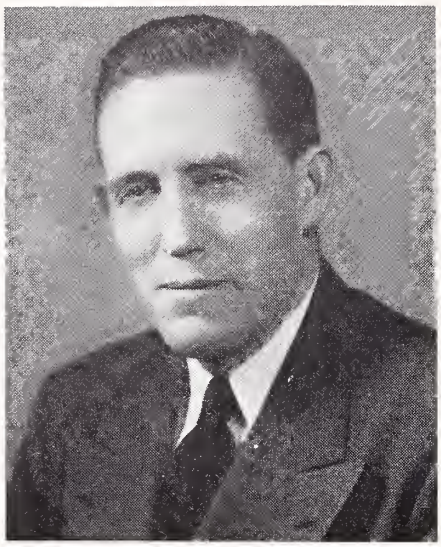
SPRING FROLIC

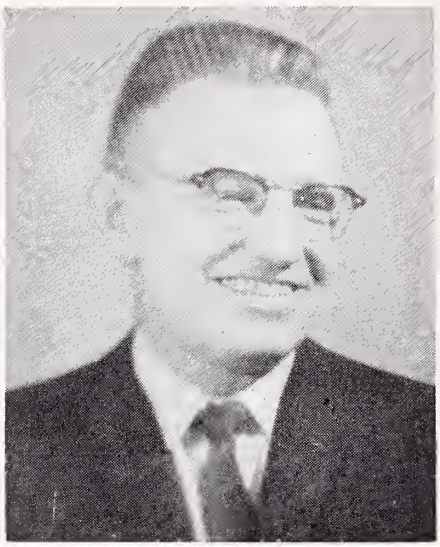
Tuesday, April 25, 9:00-12:00

Grand Ballroom—Hotel Savery
Benefit
Woman's Auxiliary Health Educational Loan Fund

Evan Morgan's Orchestra

Standard Medical & Surgical Company will sponsor the social hour from 8:30





(Left) ***Karl M. Richards****, Detroit, Michigan, manager, Field Services Department, Automobile Manufacturers Association; member, National Committee on Uniform Traffic Laws and Ordinances, National Advisory Committee for Motor Fleet Supervisory Training, and Committee on Economics of Motor Vehicle Size and Weight, Highway Research Board. (Right)* ***Billie H. Shevick, M.D.****, Moline, Illinois, industrial physician, Deere and Company; member, Industrial Medical Association and American Industrial Hygiene Association.*

ATTENTION ALL ARTISTS!

For the first time at an Annual Meeting, an

ART EXHIBIT

sponsored by the Woman's Auxiliary, will be included in the scientific section. All ISMS members and their wives are invited to display their original art or sculpture work.

Entries will be received at Veterans Memorial Auditorium on

Sunday, April 23—1:30 to 4:30 p.m.

Awards will be made in four general categories: oils, watercolors; sculpture; drawing and graphic art.

For entry blanks and specific information, write to:

Mrs. N. W. Irving, Jr.
Exhibit Chairman
4916 Harwood Drive
Des Moines, Iowa

Special Meetings and Dinners (Continued)

IOWA DERMATOLOGICAL SOCIETY

Pioneer Room—Des Moines Club
Social Hour—6 p.m.; Dinner—7 p.m.
Reservations: Robert G. Carney, M.D.
University Hospitals, Iowa City

IOWA ORTHOPEDIC SOCIETY

Des Moines Club
Social Hour—6 p.m.; Dinner—7 p.m.
Guest Speaker: Fred Reynolds, M.D., St. Louis, Missouri
Reservations: John H. Kelley, M.D.
1401 Woodland Avenue, Des Moines 14

IOWA RADIOLOGICAL SOCIETY

Colonial Room—Des Moines Room
Social Hour—6:30 p.m.; Dinner—7 p.m.
Reservations: L. L. Maher, M.D.
1419 Woodland Avenue, Des Moines 14

The scientific program will be acceptable to the American Academy of General Practice for 8 hours of Category II credit.

IOWA SOCIETY OF ANESTHESIOLOGISTS

Hotel Savery
Social Hour, Parlors C and D—6 p.m.
Dinner, West Room—7 p.m.
Guest Speaker: T. E. Sheldon, M.D., Mayo Clinic, Rochester, Minnesota
Reservations: T. A. Bond, M.D.
711 Equitable Building, Des Moines

PAST PRESIDENTS' DINNER

East Room—Hotel Savery
Dinner—7 p.m.

Tuesday, April 25

LEGISLATIVE CONTACT MEN

Iowa Room—Hotel Savery
Breakfast—7:30 a.m.

PRESIDENT'S RECEPTION AND ANNUAL BANQUET

Hotel Savery
Reception, 6 p.m.—Des Moines Room
Banquet, 7 p.m.—Terrace Room

BENEFIT DANCE

Spring Frolic
Grand Ballroom—Hotel Savery—9 p.m.
Evan Morgan's Orchestra
Sponsored by the Woman's Auxiliary for the Benefit of Its Health Educational Loan Fund

BANQUET SPEAKER

SPECIAL GUEST

(Left) ***Chester H. Lauck,*** *Houston, Texas, executive assistant, Continental Oil Company. Mr. Lauck is better known as "Lum," of the popular radio program "Lum and Abner." In that role, with his partner he is credited with a number of "firsts"—the first major network broadcast from Radio City, New York (1933); the first marathon broadcast for charity (more than 12 hours); the initial show for the Mutual radio network; and the first international broadcast by a radio team, a show produced simultaneously in London and Chicago, and heard throughout the U. S. and Great Britain. (Right)* ***Hon. Norman A. Erbe,*** *Boone, governor of the State of Iowa.*

The House of Delegates

Open to all members

SPEAKER

C. V. Edwards

First Meeting—Sunday

April 23, 10:00 a.m.

South Room, Veterans Memorial Auditorium

Roll Call

Approval of the Minutes of the Meeting Held on April 27, 1960

Reports of Officers

Reports of Committee Chairmen

Memorials and Communications

New Business

Second Meeting—Wednesday

April 26, 7:30 a.m.

General Sessions Room
Exhibit Hall
Veterans Memorial Auditorium

Roll Call
Reading of Minutes
Report of Committee on Nominations
Election of Officers
Reports of Committees
Unfinished Business
New Business
President-Elect's Address
Adjournment

SCIENTIFIC EXHIBITS

State University of Iowa College of Medicine

Electron Microscopy of Nervous Tissues—Andrew D. Dixon, B.S., D.D.S., Department of Anatomy

Early Detection and Prompt Treatment in Phenylketonuria—Robert B. Kugel, M.D., Department of Pediatrics

Protective Head Gear in Athletics—W. D. Paul, M.D., Children's Hospital

Alcoholism—State Psychopathic Hospital

Veterans Administration Hospital, Iowa City

External Manifestations of Internal Diseases—Elwood Buchman, M.D., Internal Medicine; David T. Kaung, M.D., Internal Medicine; and Robert G. Carney, M.D., Department of Dermatology, University Hospitals

Lung Cancer—A Complication of Pulmonary Tuberculosis—Isaac Horowitz, M.D., Internal Medicine; and James M. Flanagan, M.D., Radiology Service

Veterans Administration Center, Des Moines

Inferior Vena Cava Ligation and Lumbar Sympathectomy—Louis T. Palumbo, M.D., Surgical Service

General

Automotive Crash Injury Research of Cornell University—Automotive Crash Injury Research, New York City

"You Can Reduce"—Council on Foods and Nutrition, American Medical Association

Lung Cancer Prevention and the Physician—American Cancer Society, Iowa Division, Inc.

Iowa Chapter of the American Academy of General Practice

Variations in Laboratory Procedures—Iowa Association of Pathologists

Serving the Doctor and the Public—Polk County Medical Society

Lapidary Art and Allied Field for Avocation—Des Moines Lapidary Society

Iowa Association of Medical Assistants

Medical Technology—A Progressive Profession—Iowa Society of Medical Technologists

Rx: Physical Therapy—Iowa Chapter, American Physical Therapy Association

Careers in X-Ray Technology—Iowa Society of X-Ray Technicians

Pharmacy—Iowa Pharmaceutical Association

Iowa Veterinary Medical Association

Circulation Research—Iowa Heart Association

Pulmonary Disease Diagnosis—Iowa Trudeau Society

Eye Defects in Children—Iowa Society for the Prevention of Blindness

Polio Vaccine—The National Foundation

Stop Arthritis—Iowa Chapter, Arthritis and Rheumatism Foundation

Myasthenia Gravis—Iowa Chapter, Myasthenia Gravis Foundation

Adoption and Related Services—Iowa Children's Home Society

Human Betterment League of Iowa

Medical Consultant Clinic—Polk County Society for Crippled Children and Adults

Iowa Division of Vocational Rehabilitation—Iowa State Department of Public Instruction, Division of Vocational Rehabilitation

The Family Physician's Role in the Iowa Hearing Conservation Program—Iowa State Department of Health, Committee on the Conservation of Hearing for the State of Iowa

Fluorescent Antibody Techniques—The Old Versus the New—Iowa State Department of Health, State Hygienic Laboratory, Iowa City

"Who Has VD"—Iowa State Department of Health, Division of Venereal Disease Control

Isoniazid Prophylaxis for Tuberculosis in Children—Iowa State Department of Health, Division of Tuberculosis Control

How the State Department of Health Helps the Physician—Iowa State Department of Health, Division of Health Education

Vital Statistics—Iowa State Department of Health, Division of Vital Statistics

Diabetic Screening Study—Glaucoma Five Year Population Study—Iowa State Department of Health, Division of Gerontology, Heart and Chronic Disease

Nutrition Service Meets Some Unmet Needs of Iowa Hospitals—Iowa State Department of Health, Nutrition Service

Excessive Vitamins-Minerals Can Be Harmful—Iowa Dietetic Association

Rx: Milk $\bar{s}$ Contamination—Des Moines-Polk County Health Department

TECHNICAL EXHIBITORS

Abbott Laboratories, North Chicago, Illinois

American Sterilizer Company, Erie, Pennsylvania

Ames Company, Inc., Elkhart, Indiana

Baker Laboratories, Inc., Cleveland, Ohio

Blue Cross-Blue Shield Plans, Des Moines-Sioux City

Book House for Children, Lake Bluff, Illinois

George A. Breon & Company, New York, New York

Carnation Company, Los Angeles, California

CIBA Pharmaceutical Products, Inc., Summit, New Jersey

Cusack-Harmon Company, Sioux City, Iowa

DePuy Manufacturing Company, Warsaw, Indiana

Desitin Chemical Company, Providence, Rhode Island

Diamond Laboratories, Inc., Des Moines, Iowa

Dictaphone Corporation, Des Moines, Iowa

Doho Chemical Corporation, New York, New York

Eaton Laboratories, Norwich, New York

Eisele & Company, Nashville, Tennessee

Encyclopaedia Britannica, Inc., Minneapolis, Minnesota

Endo Laboratories Inc., Richmond Hill, New York

Marshall Erdman & Associates, Inc., Madison, Wisconsin

Flint, Eaton & Company, Morton Grove, Illinois

Foot-so-Port Shoe Company, Waterloo, Iowa

Geigy Pharmaceuticals, Yonkers, New York

General Electric Company, X-Ray Dept., Des Moines, Iowa

Holland-Rantos Company, Inc., New York, New York

Holmes, Prouty, Murphy & May, Des Moines, Iowa

Koch Brothers, Des Moines, Iowa

Lederle Laboratories, Pearl River, New York

Eli Lilly and Company, Indianapolis, Indiana

J. B. Lippincott Company, Philadelphia, Pennsylvania

Lloyd Brothers, Inc., Cincinnati, Ohio

Marion Laboratories, Inc., Kansas City, Missouri

S. E. Massengill Company, Kansas City, Missouri

Mastertapes Music, Inc., West Des Moines, Iowa

Mead Johnson & Company, Evansville, Indiana

Medco Products Company, Tulsa, Oklahoma

Medical Protective Company, Fort Wayne, Indiana

Merck Sharp & Dohme, Philadelphia, Pennsylvania

Merrill Lynch, Pierce, Fenner & Smith, Inc., Des Moines, Iowa

Milex Professional Specialties, Peoria, Illinois

National Drug Company, Philadelphia, Pennsylvania

Parke, Davis & Company, Detroit, Michigan

Pepsi-Cola General Bottlers, Inc., Des Moines, Iowa

Pfizer Laboratories, Brooklyn, New York

Pharmich Laboratories, Saint Louis, Michigan

Physicians and Hospitals Supply Company, Minneapolis, Minnesota

Picker X-Ray, Midwest, Inc., Sioux City, Iowa

Radium Service Corporation of America, Kenilworth, Illinois

Riker Laboratories, Inc., Northridge, California

A. H. Robins Company, Inc., Richmond, Virginia

Robinson Wholesale Company, Des Moines, Iowa

Roche Laboratories, Nutley, New Jersey

J. B. Roerig & Company, New York, New York

William H. Rorer, Inc., Philadelphia, Pennsylvania

Ross Laboratories, Columbus, Ohio

Sanborn Company, Waltham, Massachusetts

W. B. Saunders Company, Philadelphia, Pennsylvania

Schering Corporation, Union, New Jersey

Julius Schmid, Inc., New York, New York

G. D. Searle & Company, Chicago, Illinois

Security Laboratories, Burlington, Iowa

Smith, Kline & French Laboratories, Philadelphia, Pennsylvania

E. R. Squibb & Sons, New York, New York

Standard Medical & Surgical Company, Des Moines, Iowa

Stuart Company, Pasadena, California

Ray Trautman and Son, Inc., Waterloo, Iowa

Ulmer Pharmacal Company, Minneapolis, Minnesota

Union County Medical Society, Creston, Iowa

Upjohn Company, Kalamazoo, Michigan

U. S. Vitamin & Pharmaceutical Corporation, New York, New York

Vicon Instrument Company, Des Moines, Iowa

Warner-Chilcott Laboratories, Morris Plains, New Jersey

Warren-Teed Products Company, Columbus, Ohio

Westwood Pharmaceuticals, Buffalo, New York

Winthrop Laboratories, New York, New York

Scientific Articles

A Study of the Tracheobronchial Epithelium And Changes Related to Smoking

K. R. CROSS, M.D., DONALD V. WALZ, M.D.,
G. KEITH PALMER, M.D., and E. D. WARNER, M.D.

IOWA CITY

THE RELATIONSHIP between the use of tobacco and human health is a subject of increasing public interest. Of special concern has been a suspected etiologic role of tobacco smoke in stimulating metaplasia and eventual neoplasia of bronchial epithelium. In 1957, Chang reported a study in which he had contrasted routine sections of human bronchial epithelium in smokers and nonsmokers.[9] He had found that metaplasia of the bronchial epithelium occurred more frequently in smokers, that it was more frequent in men than in women, and that the greatest incidence was in individuals between 50 and 69 years of age.

In 1957, O'Neil, Lee and Edwards reported an analysis of data from 301 patients with bronchogenic carcinoma autopsied in the Department of Pathology at Washington University between 1910 and 1954.[8] It indicated that the incidence of the disease had increased seven-fold during that period of time.

The purpose of the present paper is to review a study intended to discover the degree and type of metaplastic changes occurring in the bronchial epithelium, and to determine whether or not these changes are related (1) to previous smoking, and (2) to the development of bronchogenic cancer.

The incidence of lung cancer among the patients admitted to the Iowa City Veterans Administration Hospital will indicate the magnitude of the problem of lung carcinoma. Of the first 915 autopsies performed at this hospital over a period of six years, bronchogenic carcinoma was diagnosed in 139 cases, or 15 per cent of the total. The distribution according to histologic type is similar to that reported by others,[5] 51 per cent being considered anaplastic or undifferentiated. The peak incidence occurred in men between the ages of 60 through 69. This finding, again, is comparable to that reported elsewhere.[5]

A frequently asked question has been, "What relationship, if any, exists between metaplasia of the bronchial epithelium and carcinoma?" Squamous metaplasia is seen in a variety of pathologic processes, apparently as a result of atypical epithelial regeneration. Virchow was the first to describe metaplasia, in 1884.[1] He stated that metaplasia was a direct transformation of one well-characterized tissue into another equally well-characterized, but morphologically and functionally different, tissue.

It was thought later that the metaplastic epithelium actually arose from the undifferentiated basal cells of the bronchial epithelium, and some thought that metaplasia was a transitional stage in the development of cancer.

The frequent finding of cytologic atypicality in metaplastic bronchial epithelium in lungs removed surgically and at autopsy has stimulated interest in this bronchial epithelial metaplasia and has led to a systematic study of the bronchial tree at autopsy as a means of gaining insight into the histogenesis of bronchogenic carcinoma. In 1929, Fried[2] and Weller[3] reported cases of carcinoma of the lung in which they thought they had seen evidence that excessive epithelial regeneration following chronic inflammation of the bronchus progressed to carcinoma. A microscopic "oat cell" carcinoma in a surgically removed lung which was considered primarily bronchiectatic was reported by Stewart and Allison, in 1943.

In 1957, Valentine reported 144 non-cancerous

The authors are staff members of the pathology departments at the Iowa City Veterans Administration Hospital and the SUI College of Medicine, with the exception of Dr. Palmer, who since the completion of this study has begun practice in Salina, Kansas. The study was supported by a grant from the Tobacco Industry Research Committee.

patients, 36.8 per cent of whom showed some degree of bronchial metaplasia.[7] Sixty-one per cent of those dying of chronic pulmonary diseases had metaplasia, but the incidence was only 32.8 per cent in the control group. Of 23 cases of primary lung cancer, 56 per cent had associated squamous metaplasia. Valentine felt that epidermoid carcinoma of the bronchus must exist as carcinoma *in situ* before progressing to invasive carcinoma. She likewise felt that squamous metaplasia did constitute the groundwork from which neoplastic changes eventually arose. The ages of the patients who were autopsied ranged from newborn to 81 years.

METHOD

Fifteen representative sections of the trachea and the large and small bronchi were selected in each case. It was found that this number of sections provided a fairly representative study of the tracheobronchial tree.[6] The sections were taken from the following sites and labeled numerically: trachea (1); right main stem bronchus (2); left main stem bronchus (3); right upper lobe bronchus (4); right middle lobe bronchus (5); right lower lobe bronchus (6); from each generation of the above lobar bronchi (7, 8, 9); left upper lobe (10); lower division, left upper lobe bronchus (11); left lower lobe bronchus (12); from the next generation of these bronchi respectively (13, 14, 15).

The following definitions and numbering system were adopted for descriptive classification of the changes as they occurred: (1) *normal* in all respects; (2) *transitional hyperplasia,* indicating a change to stratified arrangement of slightly irregular, cuboidal and occasional low columnar cells, four to seven cells in thickness, with no intercellular bridges (When increased numbers of undifferentiated basal cells, frequent mitotic figures, focal epithelial downgrowths, and slight variations in number, size, staining and polarity were present, the transitional hyperplasia was termed *proliferative.* When this growth activity was absent, the term *dormant* was employed.); (3) *squamous metaplasia,* indicating change to stratified squamous epithelium with intercellular bridges and keratinization; (4) *atypical metaplasia,* indicating the presence of nuclear dysplasia, with loss of polarity in at least 75 per cent of the cells (Cells might be either transitional or squamous.); (5) *carcinoma in situ,* as the term is commonly used; and (6) *carcinoma,* invasive. (See Table 1.)

TABLE 1

CLASSIFICATIONS OF METAPLASIA

(1)	Normal	(4)	Atypical Metaplasia
(2)	Hyperplasia	(5)	Carcinoma in situ
(3)	Squamous Metaplasia	(6)	Carcinoma

TABLE 2

SEMI-QUANTITATIVE CLASSIFICATIONS OF SMOKERS

O —Non-Smoker	(includes the occasional smoker)
L —Light Smoker	less than ½ pack per day
M —Moderate Smoker	more than ½ pack, less than 1 pack per day
H —Heavy Smoker	more than 1 pack, less than 2 packs per day
VH—Very Heavy Smoker	more than 2 packs of cigarettes per day

The patients were classified according to the amounts of tobacco they consumed daily in the form of cigarettes. The categories and the symbols assigned them were as follows: non-smokers, including occasional smokers (O); light smokers, i.e., less than half a pack a day, (L); moderate smokers, i.e., at least half a pack but less than one pack per day, (M); heavy smokers, i.e., at least one pack but less than two packs per day, (H); and very heavy smokers, i.e., two or more packs per day, (VH) (see Table 2). A very small number of the smokers had used pipes and cigars. The total number of years during which the person had smoked tobacco in any form was recorded, as well as the length of time that might have elapsed since he ceased. This information was available from three sources: (1) from the patient's clinical record; (2) from interviews with the patient prior to his death; and (3) by means of interviews with next of kin after his death. The latter method was successfully employed by mail in over 90 per cent of the cases.

During the three years that the study lasted, 140 autopsy cases were considered to have adequate histories and histologic material. Among these 140 suitable cases, 31 were non-smokers, but the majority of the remainder were thought to have been heavy smokers (see Table 3).

RESULTS AND DISCUSSION

One of our preliminary observations concerned the relatively high incidence of lung tissue change

TABLE 3

DISTRIBUTION OF AUTOPSIED CASES BY TYPE OF SMOKING HABIT

	Cases	Sections
Non-Smokers	31	379
Light Smokers	19	215
Moderate Smokers	13	169
Heavy Smokers	56	677
Very Heavy Smokers	21	228
TOTALS	140	1668

in all groups and all ages studied. Examination of the lung tissue revealed 48 per cent to be normal in all respects. Among all smokers, only 44 per cent were normal, whereas 61 per cent of the sections of bronchi from non-smokers were normal. This difference seems to have been significant (see Tables 4 and 5). Hyperplasia was present in 43 per cent of the sections from smokers' lungs, and in 36 per cent of those from the lungs of non-smokers. A greater difference was demonstrated in the incidences of squamous metaplasia. It was present in 16 per cent of the specimens from smokers' lungs, but in only 8 per cent of those from non-smokers' lungs.

The slight difference in the incidences of atypical metaplasia—20 and 15 per cent, respectively—is of doubtful significance (see Tables 4 and 5).

In the 140 cases, there were 26 cases of carcinoma of the lung. These represented 19 per cent of the total. Associated with the carcinomas was an increased incidence of changes in the mucosa of the tracheobronchial tree at points away from the area of malignancy (see Table 6). In these 26 cancer cases were 21, or 20 per cent, of the 72 tissue sections showing atypical metaplasia. Carcinoma *in situ* was found only in those patients who had carcinoma of the lung. (The seven instances of carcinoma *in situ* reported in these 26 cases were fewer than one would expect if carcinoma *in situ* had preceded the development of carcinoma of the lung. In studies of the cervix, the incidence of carcinoma *in situ* is much greater than that of invasive carcinoma. Ours was not a large enough series, however, to establish this observation as significant.)

Fifteen of the 70 instances of squamous metaplasia occurred in the patients with malignancy of the lung. Twenty-four of the 123 cases of hyperplasia occurred in the malignancy group. In Table 6 it can be seen that there was a significant association between atypical metaplasia, carcinoma *in situ* and malignancy of the lung. The instances of

TABLE 4

CHANGES IN BRONCHIAL EPITHELIUM

	Number of Sections		Per Cent of Sections	
	Smokers	Non-Smokers	Smokers	Non-Smokers
1. Normal	570	231	44	61
2. Hyperplasia	562	137	43	36
3. Squamous Metaplasia	197	33	16	8
4. Atypical Metaplasia	263	58	20	15
5. Carcinoma in situ	12	0	1	0
6. Carcinoma	34	0	2.6	0

TABLE 6

EPITHELIAL CHANGES

	140 Total Cases		114 Non-Carcinoma Cases		26 Carcinoma Cases	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
1. Hyperplasia	123	88	99	86	24	92
2. Squamous Metaplasia	70	50	55	48	15	58
3. Atypical Metaplasia	72	51	51	44	21	81
4. Carcinoma in situ	7	5	0	0	7	26

TABLE 5

METAPLASIA IN BRONCHIAL EPITHELIUM

	1. Normal		2. Hyperplasia		3. Squamous Metaplasia		4. Atypical Metaplasia		5. Carcinoma In Situ		6. Carcinoma		TOTALS	
	Sections	Cases	Sections	Cases	Sections	Cases	Sections	Cases	Sections	Cases	Sections	Cases	Sections	Cases
Non-Smokers	231	27	137	27	33	11	58	14	0	0	0	0	379	31
Light Smokers	119	15	80	16	23	10	26	7	0	0	3	2	215	19
Moderate Smokers	89	11	58	10	26	4	36	8	0	0	8	4	169	13
Heavy Smokers	268	42	309	49	109	29	165	33	11	6	23	20	677	56
Very Heavy Smokers	94	17	115	21	39	16	36	11	1	1	0	0	228	21
TOTALS	801	112	699	123	230	70	321	73	12	7	34	26	1668	140

squamous metaplasia seem to have been about equally numerous in patients with and without carcinoma of the lung.

Although the study fails to support the premise that carcinoma arises from pre-existing atypical metaplastic changes in bronchial epithelium, it is evident that there is a significant association between certain epithelial changes in the tracheobronchial tree and the presence of malignancy. It is recognized that our number of cases was relatively small and that definite conclusions thus cannot be drawn from this study. This report, however, does give an indication of what is occurring in this locality. It would seem that a history of cigarette smoking is significantly related to the incidence of carcinoma, and therefore difficult to ignore. A final determination of the relationship between smoking and these pathological changes will require much more study. This summary is to be incorporated as part of a nationwide study.

As individuals, we are impressed with the bronchial findings in these and many other cases that have been examined at autopsy and following surgery. Carcinoma has been found in one location, and an abundance of squamous metaplasia and variable degrees of anaplasia have been found in other parts of the same bronchial tree. So also have these precancerous changes appeared to exist in both bronchi of the man having one neoplasm. Speculating further, we cannot be sure that all postoperative deaths of patients whose bronchial carcinomas were removed early can be ascribed to extension or metastasis from the original neoplasm, and are not due to the occurrence of neoplasms at other sites.

SUMMARY

This study was an attempt to determine the type and degree of metaplastic change which occurs in the bronchial mucosa of smokers and non-smokers.

A systematic examination of the tracheobronchial trees of 310 autopsy patients was undertaken. Of these, 140 proved suitable for study.

Among the 140 cases, the bronchial tissues of only 48 per cent could be considered normal. Twenty-six of the patients had carcinoma of the lung.

A significant relationship was demonstrated between smoking, the amount and degree of atypical metaplasia, and the incidence of bronchogenic carcinoma.

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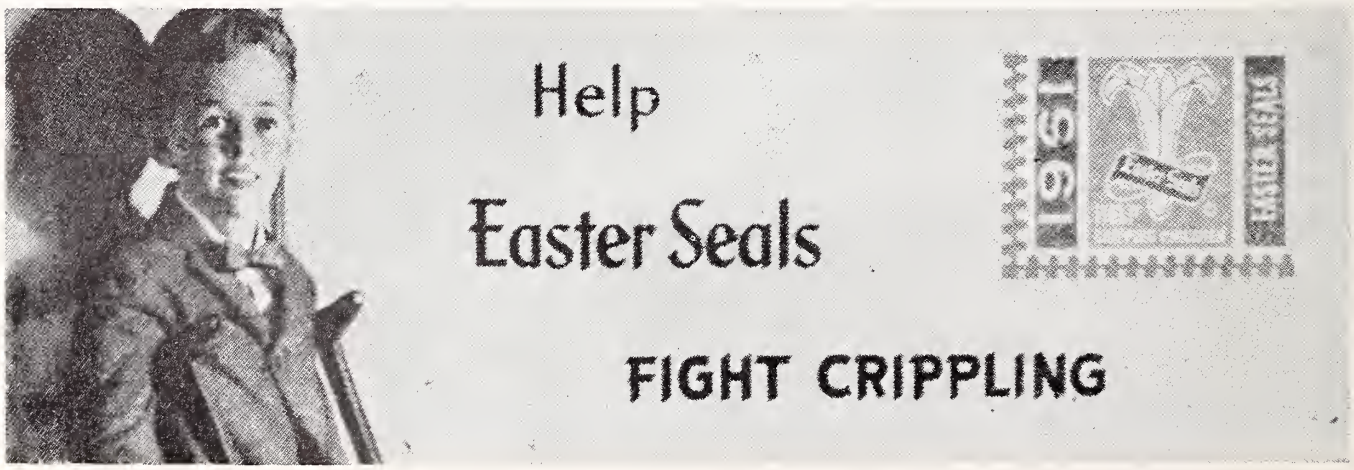
SYMPOSIUM ON PRACTICAL THERAPEUTICS

A Symposium on Practical Therapeutics is to be conducted on Thursday, March 16, at the Sheraton-Fontanelle Hotel, in Omaha, under the joint sponsorship of the Iowa and Nebraska Chapters of the American Academy of General Practice, the University of Nebraska College of Medicine and the Creighton University School of Medicine.

The program will be as follows:

10:00 a.m.	"Therapy of Rheumatoid Arthritis, Osteoarthritis and Gout"—Charles H. Slocumb, M.D., Mayo Clinic
10:40	"Geriatrics"—Henry F. Page, M.D., Jefferson Medical College and University of Pennsylvania Graduate School of Medicine
11:20	"Treatment of Bronchial Asthma"—Lawrence J. Halpin, M.D., Cedar Rapids
2:30 p.m.	"Toxemias of Pregnancy"—Isadore Dyer, M.D., Tulane University
3:10	"Convulsive Seizures in Children"—Herbert J. Grossman, M.D., University of California at Los Angeles
4:05	"Poliomyelitis"—Robert N. Barr, M.D., Minnesota State Department of Health



The Challenge of Carcinoma of the Colon

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DUBUQUE

UNFORTUNATELY, not only the laity but also too many physicians have a fatalistic attitude toward cancer surgery, stemming in part from late diagnosis, in part from past experience with inadequate surgery, and in part from the highly malignant potential of some cancers. This attitude must be replaced by one of aggressiveness in diagnosis and treatment.

To encourage such a change in attitude, we shall present a series of 51 unselected and consecutive cases of colon carcinomas treated over a 10-year period. The series illustrates what actually is going on in the small community hospital. Removed from the teaching atmosphere and unassisted by a house staff, the operating surgeon must assume total responsibility for all pre- and postoperative care, as well as for the surgery itself. No high-powered chemotherapeutic or therapeutic-radiation research tools are available. Yet, the results are highly encouraging. These 51 cases represent the usual age and sex distributions, as well as the usual anatomic sites from ileocecal valve to lower rectum.

SURVIVAL RATES

The first point of interest is survivals. Insufficient time has elapsed for numerically adequate five-year arrest figures, but if the 2½-year figures are nearly as good as the five-year figures, as many believe,[1] then it is meaningful to report that 67 per cent of all patients are living and well, apparently free of disease, at the end of that shorter length of time. If the abdomino-perineal cases are omitted, 72 per cent can be reported living and well. If the palliative resections and neglected far-advanced cases are omitted, 86 per cent can be reported living and well. *However, the figure most worthy of emphasis, since it bears out the point which has been stressed in campaigns aimed at both physicians and laymen, is that well over 95 per cent survival has been achieved in those patients who were diagnosed early through the free use of the sigmoidoscope and the barium enema.*

HOSPITAL MORTALITY

A second point of interest is hospital mortality. Three of the 51 patients died. All three were over 76 years of age. One was 93 and died of cardiac failure several days after bowel function had returned. His had been an emergency right hemicolectomy for massive hemorrhage. Autopsy revealed a clean abdomen with no evidence of residual tumor, but with evidence of cardiac failure. Another patient, 85 years of age, died suddenly several days after bowel function had returned. Autopsy permission was refused. The third death occurred after a frail invalid of 76, with multiple congenital anomalies and advanced arteriosclerosis, had successfully weathered emergency transverse colostomy for complete obstruction, had survived a subsequent left resection, and was doing well. Leakage and generalized peritonitis developed after closure of the transverse colostomy, and the patient died. No residual tumor was found at autopsy.

The gross operative mortality was thus 5.8 per cent, the three deaths occurring in elderly patients with advanced disease. The operative mortality rate among patients under 76 years of age was therefore zero.

PREOPERATIVE SURVEYS

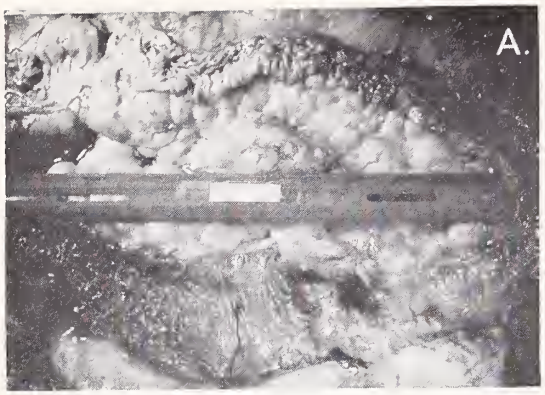
A third point of interest is that 37.7 per cent of all patients had one or more *polyps* in the colon at some distance from the primary carcinoma. Several patients had from five to 10 additional polyps, and one patient had 26 additional polyps scattered from cecum to rectosigmoid, as well as a second gross carcinoma. Two patients had earlier (metachronous) carcinomas of the colon. Each of two patients had a second frank, gross colon carcinoma concurrently.

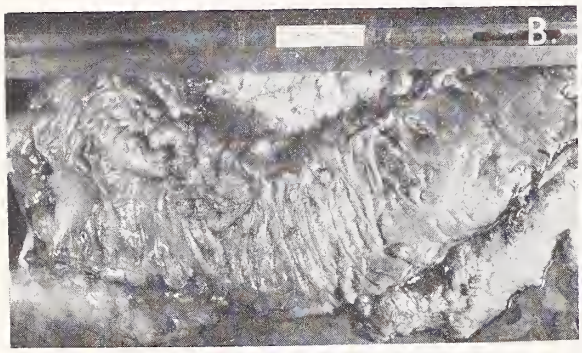
Preoperative preparation included the usual general survey, with supportive measures as indicated, and mechanical and chemical bowel preparation. Sulfathalidine for five days and neomycin for two days has been preferred. Antibiotic preparation has occasionally been omitted quite recently.

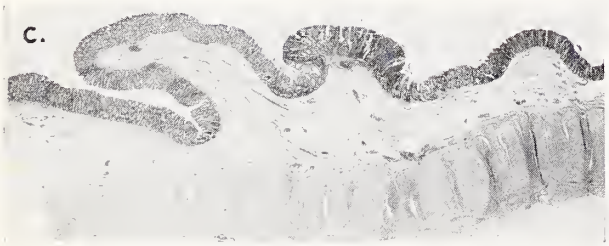
OPERATIVE TECHNIC

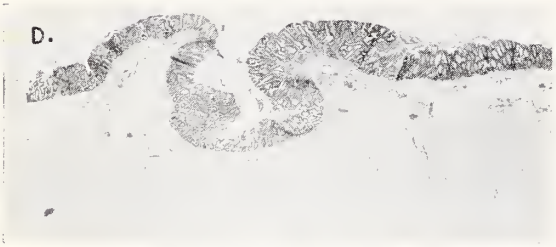
Operative technic has included minimal or no handling of the lesion initially, preliminary isolation and division of the vessels, occlusion of the lumen above and below the lesion, severing of the more remote connections, next, and the lifting out of the lesion as the last step in removal. Adherent, adjacent non-essential viscera—such as loops of small bowel, the spleen, a patch of bladder wall, parietal peritoneum or even the anterior parietes—are resected *en bloc* with the primary lesion, when advisable. For left-sided lesions, when feasible and when curative resection is intended, the inferior mesenteric artery[2, 3] is ligated flush with the aorta, and the para-aortic tissues are stripped. This procedure has repeatedly yielded several

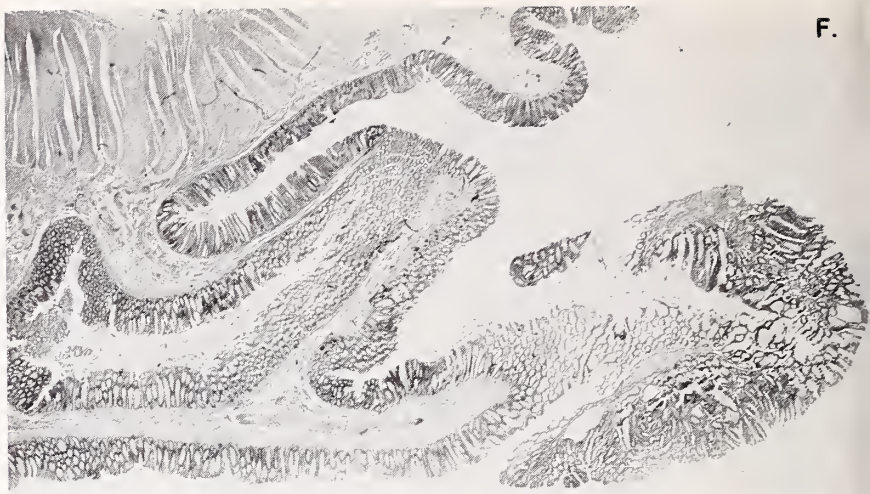
Dr. Laube presented this paper at the meeting of the Iowa Academy of Surgery at Lake Okoboji, on September 9, 1960.

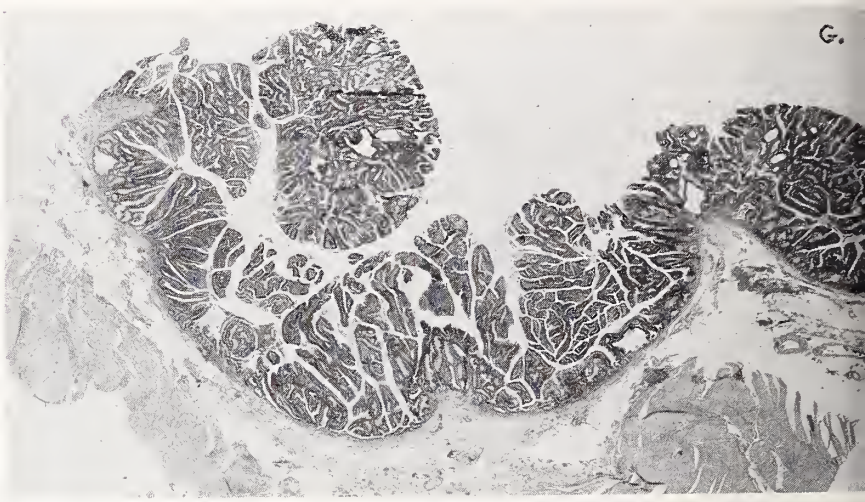


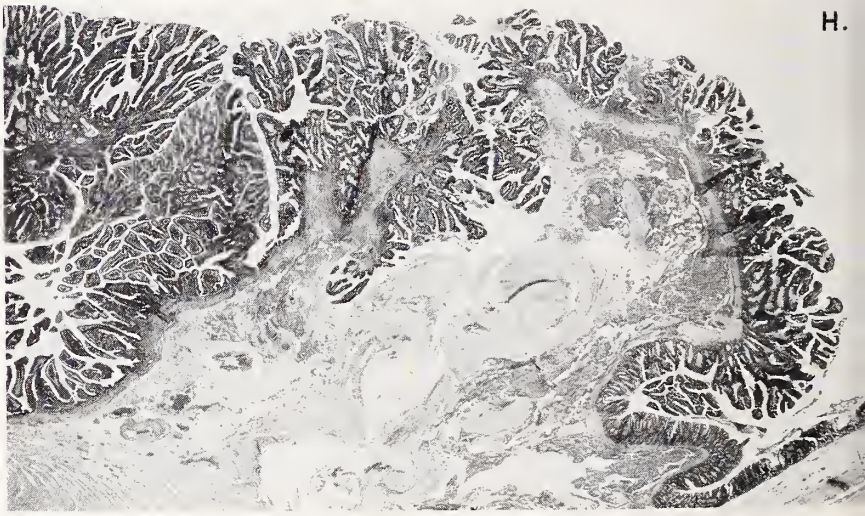












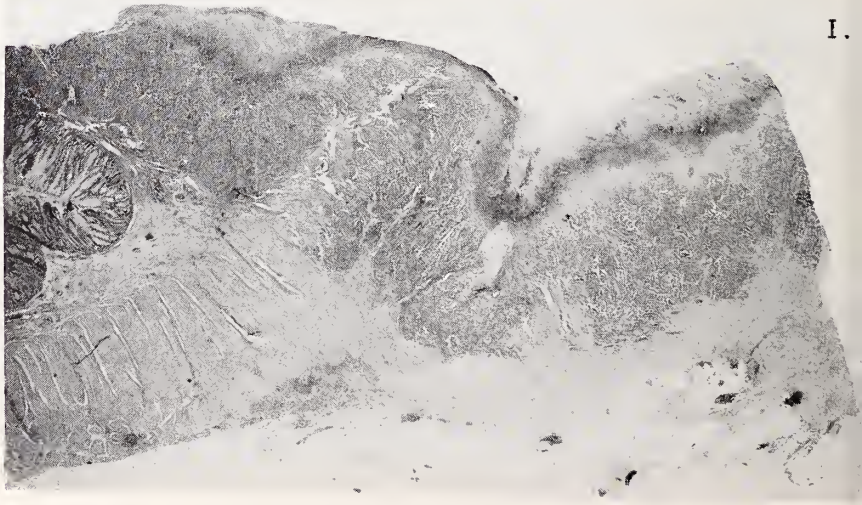


Figure 1

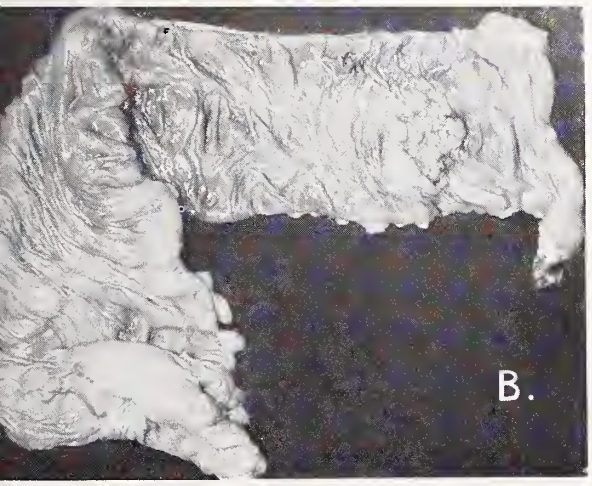


Figure 2

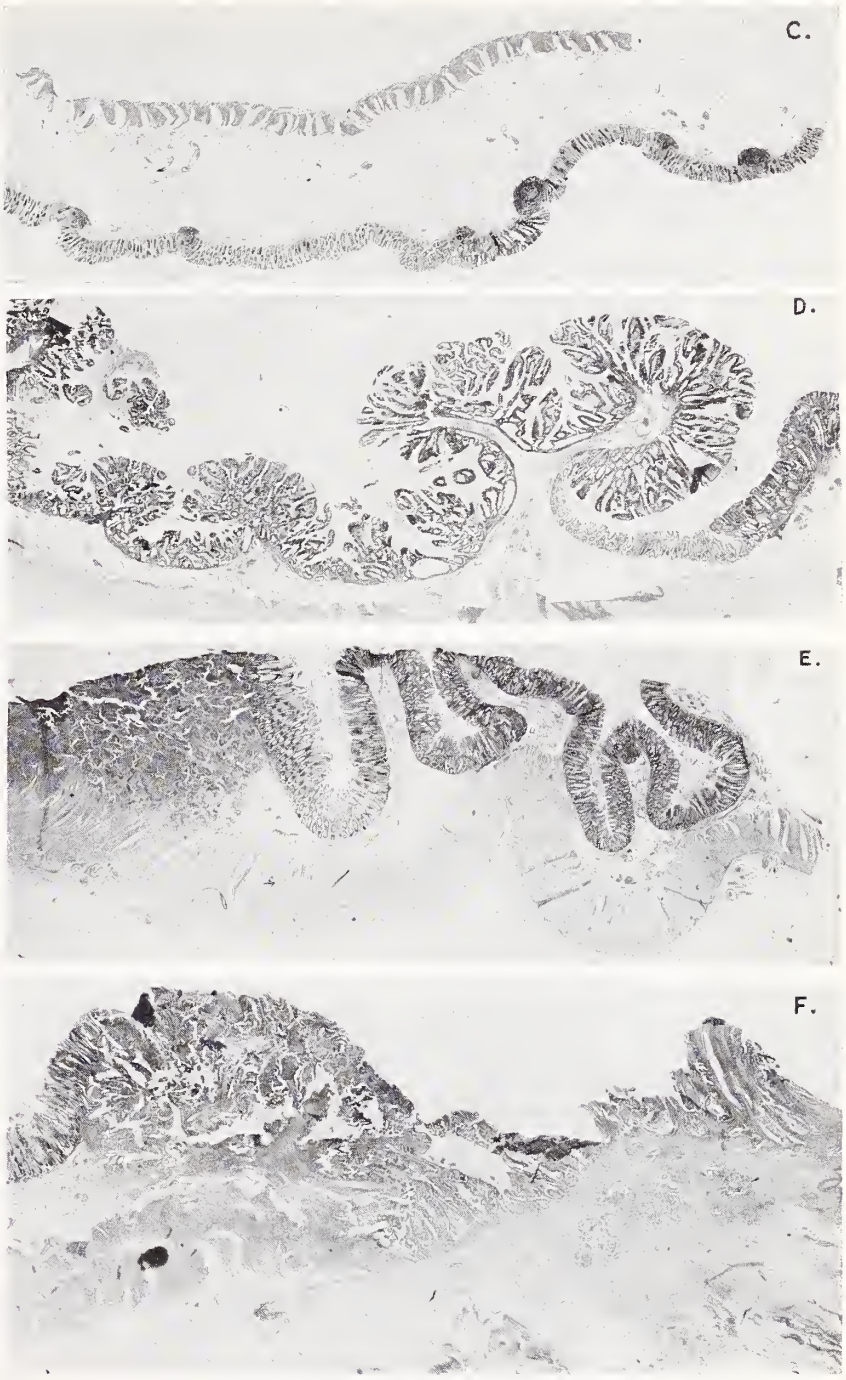


Figure 1. Patient H. B.—A. Left colon with ulcerating splenic flexure lesion and polyps (1 at black silk). B. Right colon with ulcerating and fungating, flat, unsuspected gross carcinoma and many additional polyps. C. Earliest hyperplastic epithelial changes. D. Slightly more advanced hyperplasia. E and F. Frank polyp formation, benign. G. Polyp with malignant trend. H. Frank, invasive polypoid carcinoma (right colon). I. Frank, invasive, ulcerating (annular and obstructing) carcinoma (left colon).

Figure 2. Patient G. E.—A. Splenic-flexure carcinoma presenting with gross bleeding. Three barium enemas were required to demonstrate the lesion. The spleen was included in the resection to insure wide removal of all adjacent tissues. B. Second undemonstrated right-colon carcinoma found by use of sterile sigmoidoscope during surgery. C. Earliest hyperplastic changes of colonic epithelium, remote from main lesions. D. Area of polypoid hyperplasia remote from main lesions. E. Frank ulcerating carcinoma of left colon. F. Frank polypoid and ulcerating carcinoma of right colon.

negative nodes an inch or two above positive nodes which might have been left behind if the conventional technic had been used. The inferior mesenteric vein is ligated and divided as close to the upper end as possible, usually at the lower border of the pancreas, which also marks the level of preliminary division of vessels in right hemicolectomy. When adequate mechanical preparation has been possible, *coloscopy* is usually carried out through the cut ends of the remaining bowel, after removal of the specimen.

The cut ends are usually trimmed after clearing, to insure fresh, well vascularized, freely bleeding tissues for a two-layer, interrupted-silk open

anastomosis. Before the anastomosis is begun, the bowel ends are painted with Tincture of Merthiolate, and just before closure of the anastomosis, 500 mg. of Achromycin is put into each limb. This latter step was adopted several years ago after a rather convincing study had shown better healing with ends so protected.[4, 5] A decompressive prophylactic cecostomy is sometimes employed. Tension-free, well vascularized, accurate anastomoses are the goal.

Several years ago, enthusiastic reports from Dr. Cole's laboratory[6-8] advocated field irrigation with Chlorpactin XCB (monoxychlorosene) to destroy free-floating, viable cancer cells. We used this irrigation a number of times without any observable deleterious results, but in the June, 1960, issue of ARCHIVES OF SURGERY, the Cole group has renounced Chlorpactin for this purpose as being too toxic in effective concentrations.

POSTOPERATIVE CARE

Postoperative care involves the usually accepted measures, with emphasis on a vigorous stir-up regime and absolutely nothing by mouth. It is our conviction that much ileus, distention, nausea and vomiting are induced by allowing fluids and ice chips too early. After normal bowel sounds have resumed, when the abdomen is flat and flatus is being passed, it is time enough to start oral intake. This usually occurs on the third or fourth day. Long or short tubes are avoided if possible. Gastrostomy is sometimes employed if trouble is anticipated.

COMPLICATIONS

The complications include those familiar to all of us, and only two perplexing ones need be mentioned. The first is *diarrhea*. It has been troublesome in several right-colectomy patients, but strangely enough it hasn't been much of a problem in the several total colectomy patients.

The other complication has been *colo-colonic fistula* in two patients, both left colectomies. One went home, and for five months had apparently normal bowel movements, but some cramps. When he returned for a barium enema at the end of that length of time, he was found to have a 4 cm. narrowing at the anastomosis. Recurrence was suspected, and reoperation was done. No cancer was found, but there was a fistulous tract surrounded by small bowel and omentum, through which fecal material had continued to pass. Re-anastomosis was done, and the patient is living and well three years afterward. A second similar case occurred later, and was reoperated at two months, with similar findings and results. Perhaps high aortic-level ligation predisposed to terminal-vessel thrombosis and necrosis. In passing, I might add that one patient developed acute cholecystitis on about the sixth postoperative day and was treated by cholecystectomy.

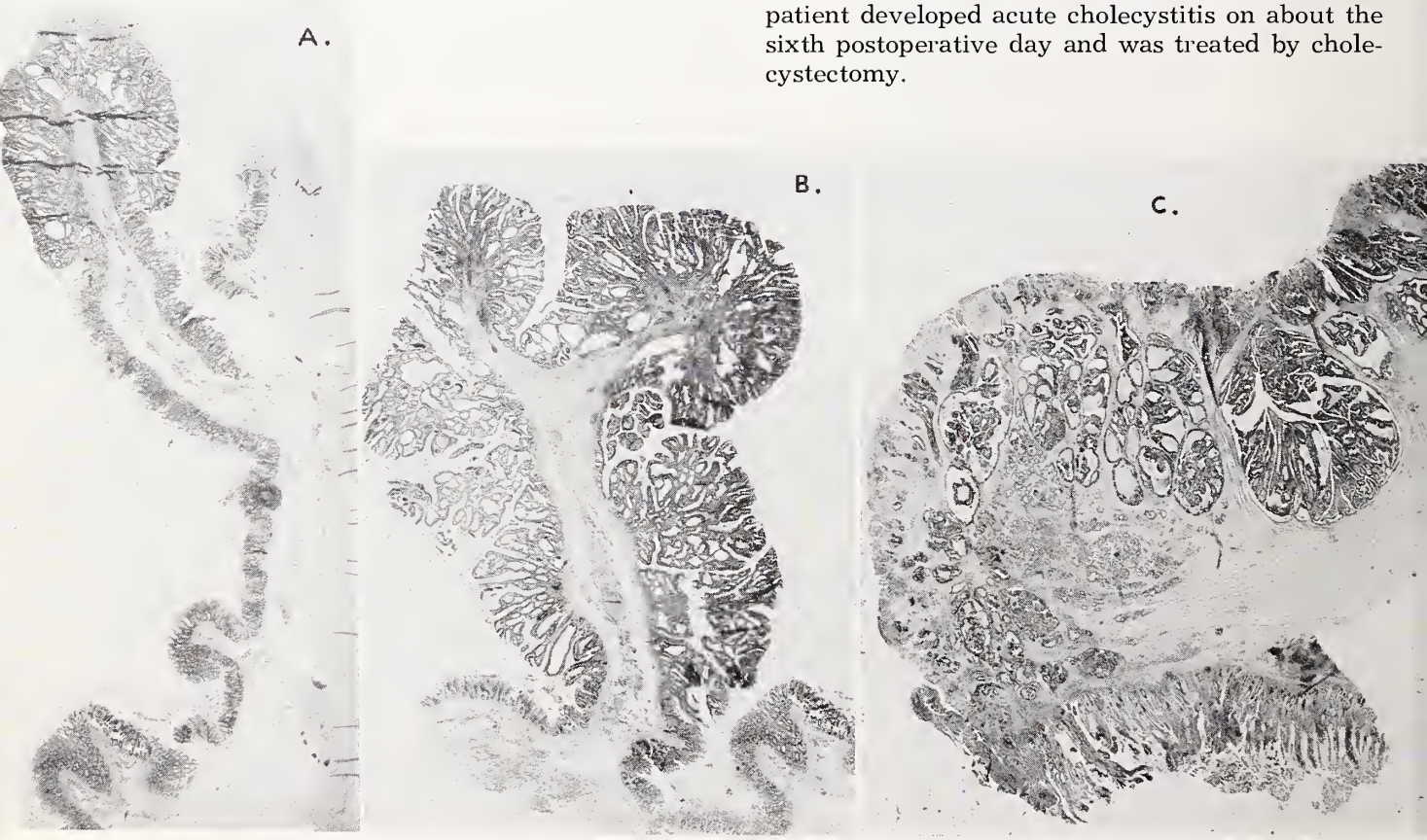


Figure 3. Patient E. L.—A. Early hyperplasia and frank polyp formation remote from main lesion of cecum. B. More advanced polyp formation, still benign. C. Invasive polypoid carcinoma.

MISSED LESIONS

Three patients' lesions were not found on initial or even on second x-ray examination. One elderly lady with no psychoneurotic traits developed abdominal cramps. No lesion was found after two x-ray examinations, but through a thin, atrophic abdominal wall, a small tumor was palpated by one examiner. It proved to be a small, annular lesion about the ileocecal valve. She is living and well five years later. The second patient was less fortunate, going one year after negative x-rays before developing complete obstruction. She was only 32 years of age, and at operation had a splenic-flexure lesion with liver metastases. The third patient likewise had a splenic-flexure lesion, asymptomatic until an episode of massive bleeding occurred. It took three barium enemas to reveal this lesion, and a concomitant transverse-colon carcinoma remained unconfirmed until coloscopy. In this case, coloscopy proved its value, for the flat, ulcerating lesion could not be palpated.

OTHER CONCOMITANT LESIONS

The other concomitant lesions included acute appendicitis in one, vesical fistula in one, and diverticulitis in several patients.

Two patients were sent for 5-Fluorouracil therapy, and both died. The first was the 32-year-old woman who died of massive toxic hemorrhagic gastroenteritis. The second died of a combination of toxicity and sepsis, and was thought at autopsy to have had extensive recurrent retroperitoneal disease. On microscopic examination, however, only necrotic debris could be found. There were no tumor cells.

One of the patients has provided us an occasion for commenting on the speed of metastasis. In October, 1956, he was sigmoidoscoped by three experienced men because of rectal bleeding. All three saw a small polyp at 25 cm. and nothing else. This was removed, together with a small pedicle, and it was benign. A double contrast enema was negative. He was lost track of until July, 1957, nine

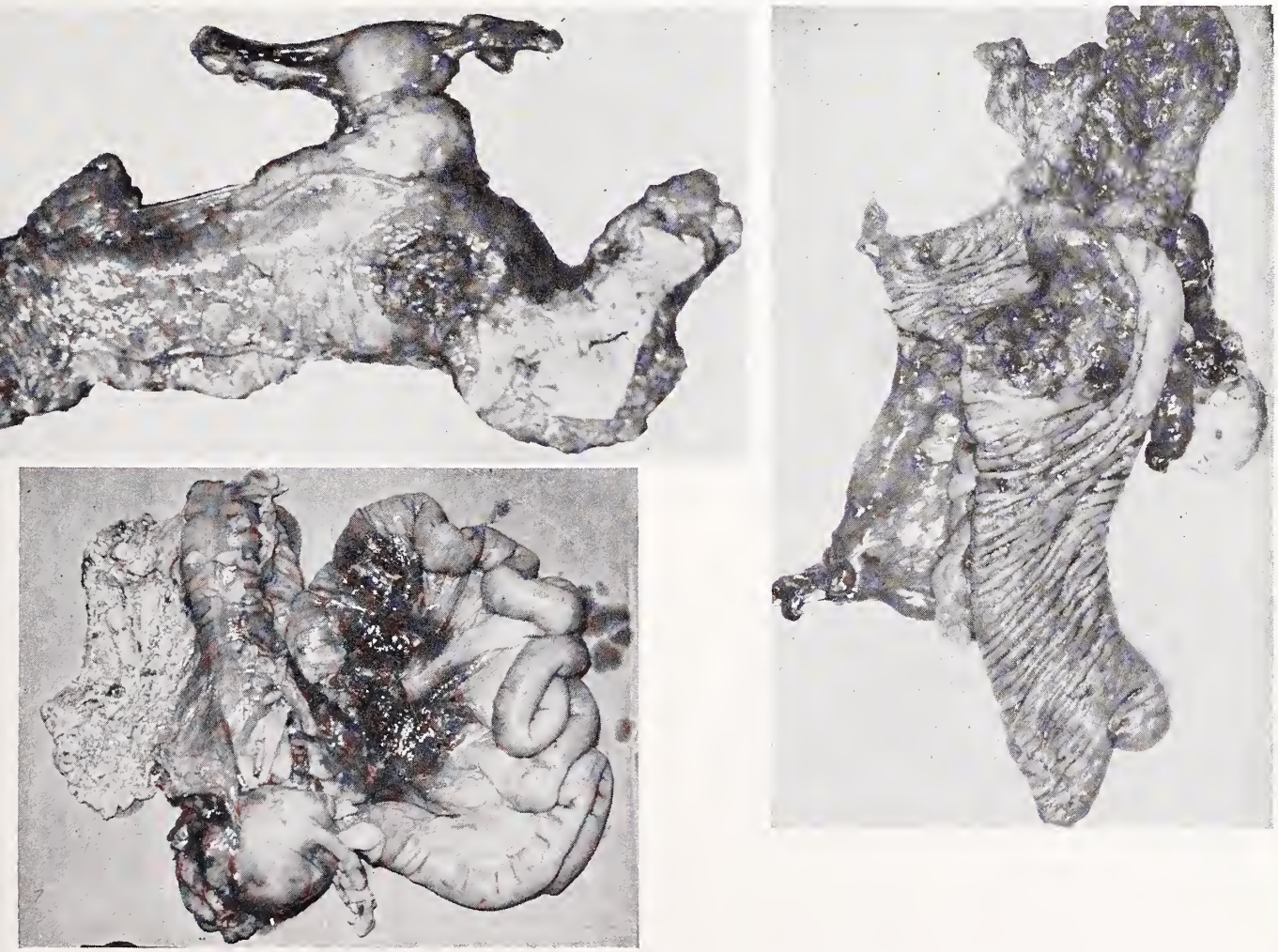


Figure 4. Three cases further illustrating occasional need to remove adjacent involved or possibly involved organs. A. Uterus, tubes, ovaries and posterior vaginal wall included in abdominoperineal resection of anteriorly situated carcinoma. B. Extensive resection of terminal ileum with advanced cecal carcinoma, in effort to include all involved mesentery. C. Removal of adherent left tube and ovary with sigmoid-colon carcinoma.

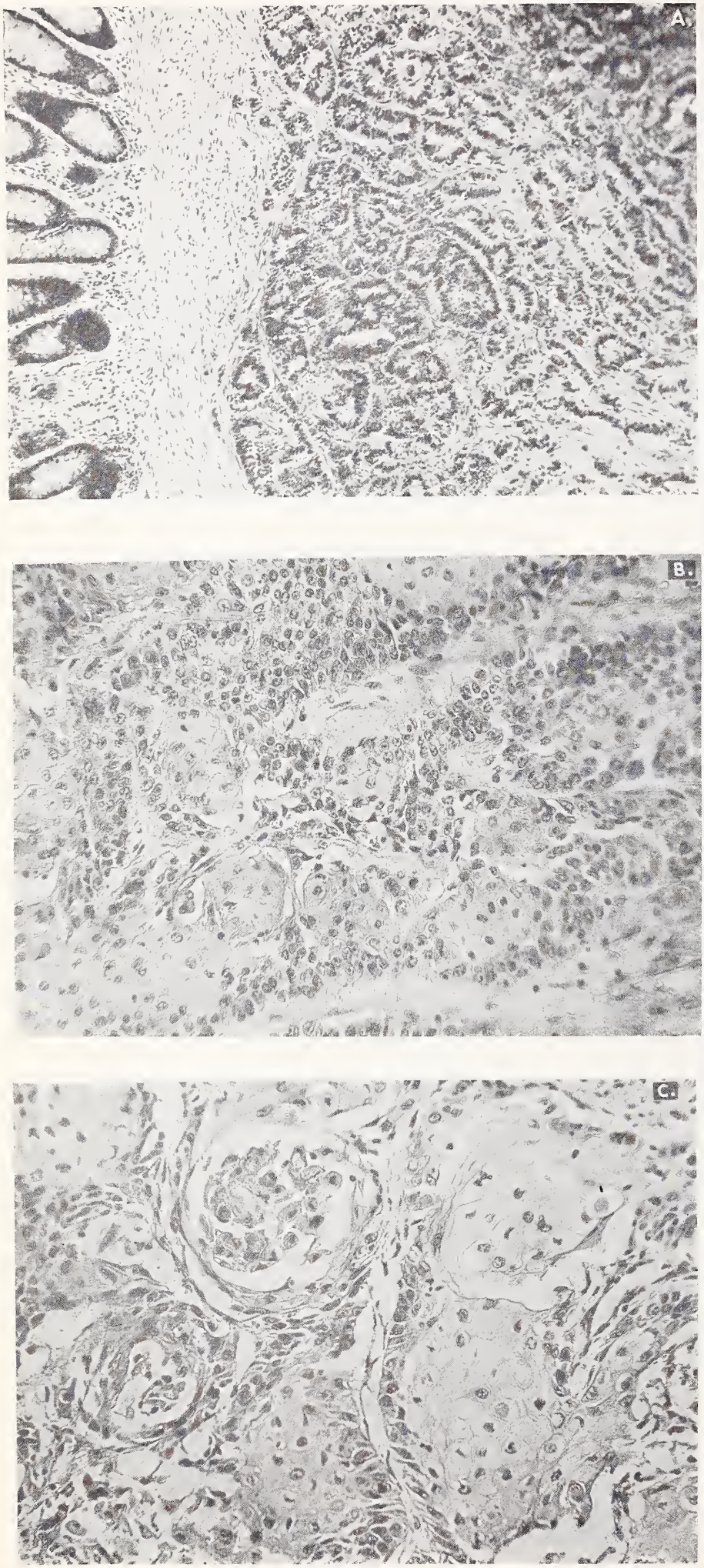


Figure 5

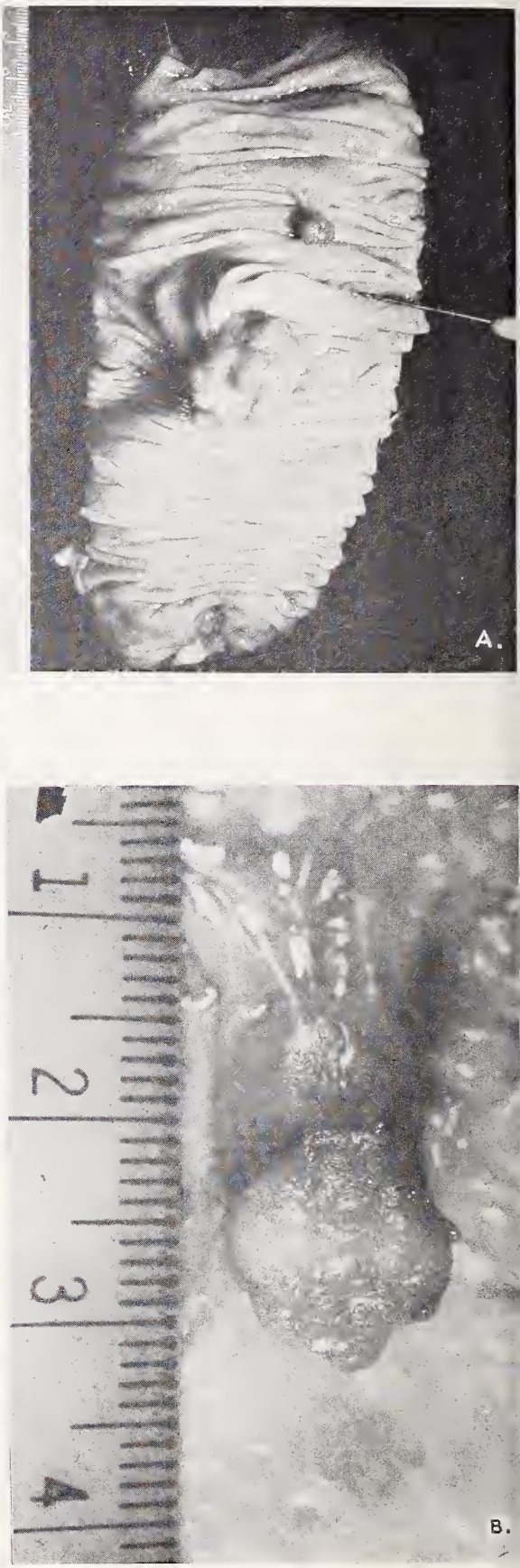


Figure 6

months later, and then he was again sigmoidoscoped. An ulcerating 2 x 4 cm. Grade III lesion was found at 16 cm. At laparotomy, the liver was studded with metastases.

At the other extreme in this series is a man of 70 who was found to have a 1.2 cm. polyp of the distal transverse colon. This finding was confirmed on repeat barium enemas. Because of chronic bronchitis and emphysema, hypertensive cardiovascular disease, a chronic, recurrent, massively-bleeding duodenal ulcer, obesity and chronic alcoholism, surgery was advised but not urged. The patient agreed to have x-ray rechecks at six-month intervals. After the first recheck two years later, at which time little change had occurred in the lesion, he was lost sight of. Five years after the first diagnosis of the lesion, a frank annular carcinoma at the precise site of the original polyp was found and removed. A second flat carcinoma, unsuspected on the basis of x-ray or operative palpation, was found by coloscopy and colotomy. Twenty-six satellite polyps were also present. The life span of this lesion was further bracketed by several negative barium enemas prior to the first positive one, the most recent negative x-ray having been taken within 18 months of the positive one.

Autopsy was performed on two of the three hospital-death patients, and on 60 per cent of those whose deaths were delayed, even though some of the latter died at home.

Curiously enough, some of our colleagues have been critical of our removing early lesions by resection, rather than by polypectomy. If a long, obviously benign pedicle exists, polypectomy through colotomy may be defensible, but if there is any doubt, segmental resection is to be preferred in the good-risk patient. Segmental resection will frequently yield dividends in terms of previously unsuspected additional polyps and will facilitate the removal of the area of colon which has been demonstrated to be polyp-prone.

CONCLUSION

1. With the standard application of generally available methods, about 70 per cent of unselected colon cancers are curable.

2. These same methods, if more vigorously directed toward early diagnosis and treatment, would greatly improve the results.

3. The operative mortality rate is low—5.8 per cent in this series, and zero in patients under 76 years of age.

4. The use of the sigmoidoscope at laparotomy will demonstrate additional, often unsuspected, lesions in a significant number of cases.

5. Primary high isolation and division of blood supply, wide resection, inclusion *en bloc* of adjacent involved structures, and the completion of a careful, tension-free, well-vascularized anastomosis in the well-prepared patient will help insure good results.

6. If colon carcinoma is suspected and not found, the x-ray examination must be repeated. Indeed, it must be performed three or more times if necessary.

7. Routine use of the sigmoidoscope by all physicians who assume responsibility for the total care of adult patients would improve these results vastly. This is usually a five-minute office procedure requiring little special equipment.

8. As has been clearly demonstrated in my illustrations and text, many polyps are already malignant, many are multiple, many are pre-malignant, and none is to be trusted.

9. The colonic epithelium of patients with colon carcinoma appears susceptible to the development of polyps (37.7 per cent), synchronous additional carcinomas (4 per cent), and metachronous additional carcinomas (4 per cent).

ADDENDA

Since the preparation of this manuscript, two additional patients have been operated upon, with good immediate results.

I wish gratefully to acknowledge the help of Sr. M. Ronan, Sr. M. Miguel, Mr. J. Joseph Crowley and Mr. Maurice Howes who photographed the specimens, and the help of Mr. Fred Kent who did the photomicography.

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Figure 5. Histologic variants. A. One case showing carcinoid pattern of adenocarinoma of rectum. B and C. One case, two areas, showing squamous-cell carcinoma in cecal lesion. Note epithelial pearls.

Figure 6. A. Early carcinoma in sigmoid-colon polyp, with two satellite polyps (scale in centimeters). B. Still earlier carcinoma in a small left-colon polyp, with tumor invading and plugging the stalk (scale in centimeters).

Anorectal Pathology in 1230 Sigmoidoscopic Examinations

J. E. CHRISTOPHERSON, M.D.
MASON CITY

We all are aware of the importance of the sigmoidoscopic examination in the diagnosis of anorectal disease. The purpose of this paper is to evaluate the effectiveness of this diagnostic procedure. Since we are all aware that malignant disease of the distal colon is often found in patients within a year of their having had either a GI workup or a hemorrhoidectomy, particular attention has been focused on determining the incidence of malignant or premalignant disease of the colon in patients with symptomatic benign disease of the anorectum.

MATERIAL

In this series there were four indications for the sigmoidoscopic examination:

1. Specific anorectal complaints such as bleeding, anal pain, protrusion, itching, constipation, diarrhea, or change in bowel habit or size.
2. Suggestive findings on digital rectal examination.
3. Complete workup for either evaluation of gastrointestinal complaints or as a part of a complete physical examination in persons over 40 years of age.
4. Previously discovered malignant or premalignant disease of the distal colon for which the patient was scheduled to receive annual follow-up examinations.

The sigmoidoscopic examination is done under conditions that are favorable both to the patient and to the examiner. A well-equipped proctoscopic room will contain a tilt table, a variety of anoscopes and sigmoidoscopes, biopsy forceps, electrical equipment for biopsy and cautery, a source of suction, and cotton-tipped swabs. I consider the assistance of a nurse invaluable.

The sigmoidoscopic examination is an office procedure, rather than an operating room procedure, for only rarely is a general anesthetic indicated. Preparation of the rectosigmoid is accomplished by the administration of a 4½ oz. enema containing sodium phosphate and disodium phosphate in a disposable plastic container. This is usually done at home, for most examinations are done by appointment. If necessary, however, administration of this enema in the office will prepare the distal colon in between five and 15 minutes.

Dr. Christopherson made this presentation at a meeting of the Iowa Academy of Surgery at Lake Okoboji, September 9-10, 1960.

HISTORY AND SYMPTOMS

In this study, patients were first evaluated as to the importance of anorectal symptoms in the diagnosis of the disease. Of 774 patients with symptoms, 617, or 79 per cent, had findings of significant anorectal pathology. The examiner, himself, should obtain a complete proctologic history before undertaking the proctoscopic examination. The use of a "proctology worksheet" helps in recording this information. Since there is such a high incidence of disease in anorectal symptomatology, it behooves the examiner to pay particular attention to each of the patient's complaints, so that he will be on guard for particular disease processes.

In this series the complaint of bleeding was by far the most common, occurring in over half of the patients. The presence of blood indicates a break in the continuity of the anoderm or mucous membrane. It most frequently is caused by hemorrhoidal disease, but it may be due to chronic anal fissure, anal abrasion, benign or malignant polyp, ulcerative colitis, carcinoma, factitial proctitis or diverticular disease.

The second most common complaint was constipation, occurring in almost one-third of the patients. In the absence of chronic constipation, one's attention will be directed to conditions causing obstruction of the fecal flow such as malignant disease, diverticulitis, radiation proctitis or anal stenosis. This complaint may be associated with diarrhea or change in bowel habit or size.

Pain occurred as one of the primary complaints in one-sixth of the patients. Pain during defecation must come from the anal canal, since rectal mucosa is supplied only by the sympathetic nervous system. Chronic anal fissure is a posterior midline ulcer of the anoderm, and is differentiated in this study from anal abrasion in that the latter is a split caused by trauma and usually heals under conservative management. Constant pain may be caused by perianal infection or thrombosed hemorrhoids.

Protrusion from the anus was associated with a high incidence of hemorrhoidal disease. Also to be considered are polyps or hypertrophied anorectal papillae. Itching is always associated with some degree of pruritus ani, which can be diagnosed by the history and by visualizing the pale, lichenified skin.

PROCTOLOGY WORK SHEET

Date _____

Referred by _____

Patient _____

Address _____

BLEEDING
- Amount
- Mixed

BLACK

PAIN

ITCHING

HEMORRHOIDS

PROLAPSE

CONSTIPATION LAXATIVE

DIARRHEA

INFECTION

DRAINAGE Pus Mucus

EMPTIES

SIZE

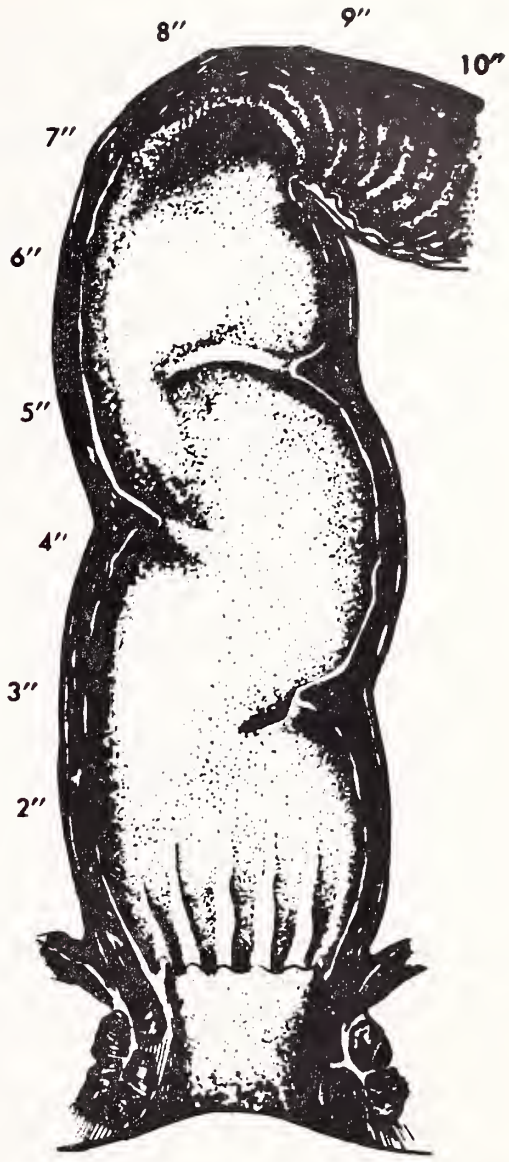
HABITS

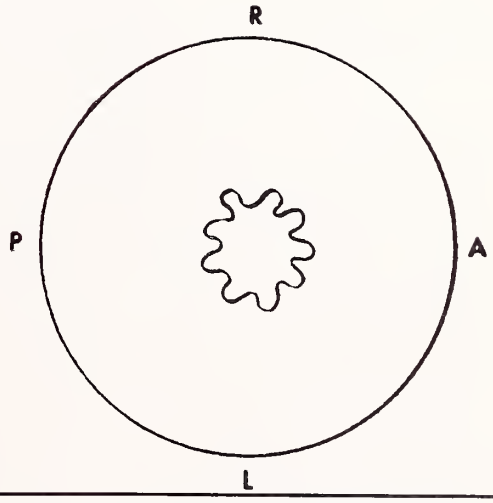
ABDOMINAL CRAMPING

PREVIOUS ANORECTAL SURGERY

_____

Recommendations





Fuller Pharmaceutical Company

RESULTS

When the entire series of symptomatic and asymptomatic patients is analyzed, as Table 1 shows, the examination results are found to have been negative in only 282, or 27 per cent. Of 262 asymptomatic patients examined, either as part of a work-up or a routine physical, 157, or 59 per cent, had positive sigmoidoscopic findings.

It is to be noted that hemorrhoidal disease leads all other pathologic entities in Table 2. The coincidence of premalignant and malignant disease found in the same patients is highly significant, for therapy directed toward the cure of a benign condition would, in the absence of sigmoidoscopy, have left undiscovered 51 patients with benign polyps, six patients with malignant polyps, and four patients with frank carcinomas of the distal colon—an incidence of 18 per cent. One can draw only one conclusion—that hemorrhoidectomy should not be done before preliminary sigmoidoscopy.

A benign polyp is an adenoma, but the association with malignant disease is now well accepted. The typical adenomatous polyp is the same color as the surrounding mucosa. When the base is broad, it is a sessile polyp; when the attachment is a stalk, it is a pedunculated polyp. Adenocarcinoma, usually grade 1, may be demonstrated in an area of an otherwise benign polyp. It is to be noted from Table 2 that polyps tend to be multiple. Accordingly, it has become my practice to examine these patients annually to detect new polyps.

Carcinoma requiring anterior colon resection or abdominal perineal resection occurred in 29 patients—an incidence of 4.8 per cent of the group represented in Table 2. Diseases of the distal colon of a benign nature also are noted in Table 2.

The information noted in Table 3 indicates that there is a significantly high yield of pathology demonstrated in the sigmoidoscopic examinations of patients as part of routine gastrointestinal work-ups and complete physical examinations.

Table 4 indicates the over-all incidence of premalignant and malignant disease in the entire series.

TABLE 1

1230 SIGMOIDOSCOPIC EXAMINATIONS IN 1036 PATIENTS

	Patients
Negative Examinations	282
Symptoms and Positive Examinations	597
No Symptoms but Positive Examinations	157
	1036

TABLE 2

ANORECTAL DISEASE IN 597 PATIENTS WITH SYMPTOMS

	Patients		Associated Findings
Hemorrhoids	331	Benign Polyp	51
		Malignant Polyp	6
		Carcinoma	4
Chronic Anal Fissure	26	Benign Polyp	3
Anal Abrasion	46	Benign Polyp	2
		Carcinoma	1
Fistula	14	Squamous Cell Ca of Anus	1
Pruritus Ani	35	Benign Polyp	3
		Carcinoma	1
* * *			
Benign Polyps	107	(These patients demonstrated a total of 183 benign polyps and 26 malignant polyps.)	
Malignant Polyps	16		
Carcinoma of the Rectum or Sigmoid	29		
* * *			
Ulcerative Colitis or Proctitis	17		
Radiation Proctitis	6		
Diverticular Disease			
Diverticula Seen	17		
Assoc. With Benign Polyps	5 22		
Melanosis Coli (Benign Polyps 2)	14		

SUMMARY AND CONCLUSIONS

The sigmoidoscopic examination is easily performed and has a high yield of positive findings. It should be done in all persons having anorectal symptoms, and should be made a part of the "complete physical examination" in all patients over 40 years of age.

TABLE 3

ANORECTAL DISEASE IN 157 PATIENTS WITHOUT SYMPTOMS

	Patients		Associated Findings
Hemorrhoids	82	Benign Polyps	12
		Malignant Polyps	0
		Carcinoma	0
Benign Polyps	62		
Malignant Polyps	12		
Carcinoma	2		
Carcinoid of Rectum	1		
Diverticular Disease	10		

TABLE 4

INCIDENCE OF PREMALIGNANT AND MALIGNANT DISEASE IN 1036 PATIENTS

	Patients	Per Cent
Benign Polyps	169	16.4
Malignant Polyps	22	2.1
Carcinoma	31	2.9

Ectopic Pregnancy With Concurrent Intrauterine Pregnancy

J. LAWRENCE SMITH, M.D.
AMES

CONCURRENT ECTOPIC and intrauterine pregnancy is an uncommon condition, but one that is of more than usual interest. The diagnosis is frequently missed. The purpose of this paper is to present a case from my personal experience, to review the literature pertaining to this subject and to discuss its various aspects. It is to be hoped that an increased awareness of the entity will improve physicians' diagnostic accuracy, lower the maternal morbidity, lessen the danger to the mother's life and, finally, lessen the danger to the possibly normal fetus.

HISTORY

In 1708 Duverney, in France, was the first to report a case of concurrent ectopic and intrauterine pregnancy. His case and most of the others that were reported up until the start of the twentieth century were diagnosed at autopsy. Since then, a number of excellent reviews of the subject have been published. In 1933 Gemmell had succeeded in finding 276 reported cases, and 217 of them were well enough documented to be considered valid. In 1957, Winer, Bergman and Field said they had found a total of 395 cases reported prior to 1948, and 68 more that had been described in the literature between 1948 and 1957. These, they reviewed in detail, and then they added three from their own experience. From July, 1957, to the present time, an additional 15 have been reported. According to my computation, then, a total of 481 instances of concurrent ectopic and intrauterine pregnancies have thus far been reported. The case on which I shall now report brings the number to 482.

CASE REPORT

Mrs. M. D., age 35, gravida 1, para 0, was admitted at 12:30 p.m. on August 12, 1957, with the chief complaint of severe, lower abdominal pain. At approximately 3:00 a.m. on that same day, she had experienced an abrupt onset of the pain bilaterally, but a bit more markedly on the right. There was moderate nausea, but no vomiting and no diarrhea. The pain was constant, sharp and burning. There was no dysuria.

The patient had noted the secondary symptoms of pregnancy—namely, tingling of the breasts, mild morning sickness and frequency of urination. Her last menstrual period had been May 28, 1957, and had been normal in character. She gave no history of irregular menses in the past. She had been endeavoring to become pregnant for several years.

Her history revealed that she had had a cholecystectomy four years prior to this admission, but otherwise her history and a review of her symptoms were unremarkable.

Examination revealed a temperature of 98.8° F., pulse 72 per min., respirations 18 per min., and blood pressure 120/80 mm. Hg. Her general appearance was that of an obese young white woman in acute distress with abdominal pain. The head, eyes, ears, nose, throat, lungs and heart were within normal limits. The abdomen was obese, and there was a well-healed right, upper rectus incisional scar. The bowel sounds were markedly hypoactive. There was generalized tenderness, but it was much more severe in the lower midline and the right lower quadrant. Rebound pain was marked in the right lower quadrant, and was referred there from all of the other areas of the abdomen. Pelvic examination revealed a soft cervix, with a slight bluish tinge. The uterus was approximately twice normal size. There was a tender, doughy mass palpable in the right cul-de-sac.

The laboratory findings were as follows: urinalysis normal; erythrocyte count 4,830,000; hemoglobin 12.8 Gm.; and white blood cell count 16,400. The differential count was 83 per cent neutrophils, 12 per cent small lymphocytes, 2 per cent large lymphocytes, and 3 per cent monocytes.

A diagnosis of right ectopic pregnancy was made.

Laparotomy through a low midline incision was promptly undertaken. When the peritoneum was opened, a large amount of free, cloudy, brown liquid was found. The right ovary was largely occupied by a chocolate cyst, and there was much adherent friable brown tissue. The right fallopian tube was buried in the cul-de-sac in a mass of this same friable dark-brown tissue. The cystic portion of the ovary was removed. The right cul-de-sac was digitally explored, and since this procedure produced fresh bleeding, further exposure was obtained by the removal of the fallopian tube and

Dr. Smith made this presentation at the meeting of the Iowa Academy of Surgery at Lake Okoboji, September 9 and 10, 1960.

the incising of a portion of the broad ligament. A large quantity of old blood and the products of conception were found in the pelvic floor, at points both anterior and posterior to the broad ligaments. These were easily removed digitally, and only minimal fresh bleeding occurred. The uterus was soft and larger than could have been expected on the basis of simple consensual hypertrophy. Thus, the possibility of a concurrent intrauterine pregnancy was actively considered. A minimal manipulation of the uterus was done. The appendix was removed, and the stump simply ligated. Routine closure of the abdomen was performed. The patient's postoperative condition was excellent, and there was no need for a whole-blood transfusion.

The microscopic pathology report was as follows: "The fallopian tube shows no inflammatory changes of its mucosa or wall. The contiguous supportive stroma is markedly congested and partly suffused with erythrocytes.

"The ovarian cyst is lined with endometrial tissue. This tissue shows a very well developed decidual reaction. Moreover, a decidual change is found within adhesions extending along part of the surface of the ovary.

"The material from the cul-de-sac of Douglas is deciduous. This material includes no chorionic villi.

"The appendix shows no inflammatory changes."

The patient had an uneventful postoperative course and was dismissed from the hospital on her fourth postoperative day. She was told of the possibility of an intrauterine pregnancy, and was directed to report any sign of abnormal bleeding. She subsequently had a normal pregnancy. On March 13, 1958, a full-term, live, normal female infant weighing 7 lbs. 12½ oz. was delivered by low forceps. The mother's postpartum course was normal, and to date the infant has been a healthy, intelligent child. As this is written, the patient is about to bear another child.

This, then, was a case of ectopic (right ovarian) pregnancy, with a secondary implantation in the right cul-de-sac and with a concurrent intrauterine pregnancy that progressed undisturbed to a normal, full-term delivery.

DEFINITION AND PATHOLOGY

The term *concurrent ectopic and intrauterine pregnancy* has been chosen deliberately. I am speaking specifically of the circumstance in which an intrauterine pregnancy and an ectopic pregnancy coexist, both in a live state. The term *combined pregnancies* implies that the conditions must coexist in a live state and must have resulted from one fertilization or from two fertilizations within a relatively short time. *Compound pregnancy* denotes the superimposition of a pregnancy upon a previously existing pregnancy, the time interval varying from a few days to a period of months. Although most of these anomalies should be classified as combined pregnancies, in several of the reported cases it is apparent that the ectopic implantation occurred from several weeks to three or four months after the intrauterine implantation. *Concurrent ectopic and intrauterine pregnancy* means, very simply, that an intrauterine and an ectopic pregnancy are at some time both current.

The fundamental pathology is implicit in the definition, but the etiology is not quite so simple to express. Monozygotic twins can be ruled out, for it has never been shown that they can be partitioned and then can choose separate sites of implantation. It must be assumed, therefore, that all concurrent ectopic and intrauterine pregnancies result from the fertilization of two separate ova. These ova may arise from two different follicles on one or both ovaries, or less commonly they may arise from the same follicle, as is evidenced by the discovery, in some instances, of a single corpus luteum at the time of exploration. Regardless of the time or site of ovulation and fertilization, one ovum is transported to the uterine cavity and implanted therein, and the other ovum becomes arrested somewhere between the ovary and the interstitial portion of the fallopian tube.

There are a number of factors which may contribute to this failure of the second ovum to migrate to the uterine cavity. There may be a simple failure of the fimbriated end of the tube to catch or aspirate the ovum properly, or there may be a delay in transperitoneal migration. Inadequate peristaltic action may fail adequately to propel the second ovum. Entrapment may occur in such congenital anomalies as diverticula. Acquired defects such as stricture or kinking of the tube by adhesions may obstruct the progress of an ovum on one side, whereas an ovum may pass unhindered through the other tube. In cases where ovulation and fertilization of both ova are not simultaneous, there may be an increased receptivity of the tube to implantation, or a narrowing of the lumen as a result of the hormonal influence of the previously established pregnancy. Undoubtedly there are other factors that could be postulated as contributory causes of both simple ectopic pregnancy and concurrent ectopic and intrauterine pregnancy. Obviously, much of this subject remains in the realm of speculation.

PERTINENT STATISTICS AND OBSERVATIONS

As regards site, the ectopic implantations in these concurrent pregnancies follow the pattern that is characteristic of simple ectopic pregnancies. An analysis of the 87 cases that have been reported since 1948 shows 42 instances of implantation in the right tube, 32 in the left tube, 1 bilateral, 10 abdominal and 2 ovarian. The average age of the patients has been 31 years, and 40 of the 87 women have been 31 years of age or older. The tendency for this condition to occur in the older age group has been recognized in most of

the published reviews of the subject. Parity also seems to be an important factor. There has been a marked predominance of multiparous women among these patients, the ratio having been 53 to 16 among those whose parity was reported. Most of the primiparous women gave histories of sterility problems or previous spontaneous abortions or both.

For purposes of further discussion, it seems well to analyze the cases according to the sequence of events, in a manner resembling that of Winer, Bergman and Fields. First, there was one autopsy case—the only maternal mortality in the cases of this sort that have been reported since 1948. The death was not obstetrical, but was caused by a cerebrovasular accident during a 32-year-old woman's six months of gestation. She was hospitalized for treatment of the ectopic pregnancy, but the intrauterine pregnancy was unsuspected until the time of postmortem examination.

The remaining 86 cases can be categorized as follows. Group I is made up of the cases in which the ectopic pregnancy was terminated first. These numbered 55 (64 per cent). Group II consists of those in which the intrauterine pregnancy was terminated first, either by spontaneous abortion or curettage. There were 20 of these (23 per cent). Group III includes those cases in which the intrauterine pregnancy was terminated first either by vaginal delivery or cesarean section. They numbered 11 (13 per cent).

The diagnostic accuracy, the duration of pregnancy and the fetal salvage rate naturally varied considerably from one of these groups to another. In Group I, the presence of both an ectopic and an intrauterine pregnancy was recognized prior to surgery in only eight of the 55 instances. In 11 cases, the intrauterine pregnancy was recognized preoperatively, but the ectopic was undiagnosed until laparotomy. In 34, the ectopic pregnancy was recognized before surgery, but not the intrauterine. In two cases, neither diagnosis was suspected, and laparotomy was performed for suspected appendicitis. The existence of the intrauterine pregnancy remained completely unsuspected even after termination of the ectopic pregnancy in 20 cases.

It could be said that most of the authors who reported recognition of the second pregnancy were giving themselves the benefit of retrospective judgment, at least in some degree. Failure to recognize the intrauterine pregnancy carries comparatively little danger to the life of the mother, but it undoubtedly contributes to the morbidity in some instances, and it is fraught with danger to the fetus if routine instrumentation is performed in the management of the ectopic pregnancy.

In Group II, quite logically, 20 of the 20 cases were correctly diagnosed as intrauterine pregnancy. In eight instances, the ectopic pregnancy was recognized within a few hours after the termination of the first pregnancy. Twelve times, the ectopic remained undiagnosed for a period of one or more days. Obviously, this failure of recognition materially increases the maternal morbidity, not to mention its increasing the threat to life.

Group II necessarily comprises those cases in which the site of ectopic implantation permitted growth to a viable or potentially viable state. Not one of the 11 patients was diagnosed as having an ectopic gestation prior to the delivery of the intrauterine infant. In six cases the second pregnancy was unrecognized for periods of several days to several weeks afterward. This situation, of course, increases the danger to the mother and materially reduces the already small fetal salvage rate.

The duration of the pregnancies, understandably, has varied from group to group. In Group I, 51 of the ectopics terminated in the first trimester, and four in the second trimester. The intrauterines terminated in the first trimester 12 times, terminated in the second trimester nine times, and survived to term or near term gestation in 34 instances. In Group II, all of the intrauterine and ectopic pregnancies terminated in the first trimester. In Group III, both pregnancies terminated during or after the third trimester in all instances.

The fetal salvage rate is very low. The intrauterine gestations produced 45 live infants at birth, and 41 of them survived one week or more. Of the ectopic gestations, only seven produced live infants at birth, and only four of them survived one week or longer.

DISCUSSION

By far the most significant thing that one notes in reviewing the reported cases is the infrequency with which a correct diagnosis of concurrent ectopic and intrauterine pregnancy has been made. Ectopic pregnancy is the more imperative condition, and when symptoms and physical findings suggest its presence, it receives prompt attention. At the time of surgery, the uterus may be noted as moderately enlarged and somewhat soft. These changes may be consensual to the ectopic gestation. Should there be more than the usual hypertrophy, however, the possibility of an intrauterine fetus must be considered. Failure to recognize this condition can lead to increased morbidity for the mother, if there is an incomplete abortion of the intrauterine gestation. On the other hand, if this gestation is normal, overzealous therapy in the form of instrumentation could result in the unnecessary loss of the fetus.

When spontaneous abortion occurs first, the possibility of a concurrent ectopic pregnancy should be suspected if the bleeding is unusually heavy and if there are signs of peritoneal irritation. Suspicion should increase if there is marked unilateral tenderness, and particularly if there is also a palpable unilateral mass. In these cases, no fetal salvage can be considered, but the dangers im-

plicit in an unrecognized ectopic pregnancy are well known.

In the rare instances where both pregnancies go to term, the situation is unlikely to be recognized until the one infant is delivered and the other fails to present. If the fetal parts are unusually distinct and easily palpated, the correct diagnosis may be suspected beforehand, in which case x-ray studies are helpful. Delay in removal of the full-term ectopic infant means increased danger for both mother and child.

CONCLUSIONS

A case of right ovarian ectopic pregnancy with concurrent intrauterine pregnancy has been presented, along with a brief historical review and the pertinent statistics on previously reported cases of this type. The infrequency of correct diagnosis and the consequently increased maternal morbidity and fetal mortality have been emphasized.

Awareness of the possible occurrence of concurrent ectopic and intrauterine pregnancies will improve both diagnostic accuracy and the management in these cases.

(Acknowledgment is made to my former associate, Dr. R. J. Johnson, of Iowa Falls, who referred this patient and participated in her care.)

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POSTGRADUATE SHORT COURSES IN KANSAS CITY

The University of Kansas School of Medicine is to offer two postgraduate short courses during March on its campus at Kansas City, Kansas.

The program on March 6-8 will deal with recent advances in pediatrics, and the faculty will consist of Dr. John A. Anderson, of the University of Minnesota; Dr. Susan Coons Dees, of Duke University; Dr. Heinz F. Eichenwald, of Cornell University; Dr. Wallace W. McCrory, of S.U.I.; Dr. Donald C. Nilsson, of the University of Nebraska; Dr. Richard T. Smith, of the University of Florida; and 11 KU professors. One specific area of pediatric care—allergy—will be considered on the first day, and emphasis will be placed on recent advances having clinical application during the remaining two days. The registration fee is $45 for the full course, and proportionately less for either one or two of the three days. The AAGP will allow up to 18 hours of Category I credit to those of its members who attend.

The KU Medical-Surgical Clinical Symposia will be presented on March 20-24. Following are the topics and the guest instructors who will participate, along with members of the KU faculty:

Monday, March 20—Pulmonary disease. Dr. Seymour M. Farber, University of California at San Francisco, and Dr. William S. Spicer, Jr., of the University of Maryland.

Tuesday, March 21—Gastroenterology. Dr. Lloyd L. Brandborg, University of Washington, Seattle; Dr. Charles H. Brown, Cleveland Clinic; and Dr. Harry A. Oberhelman, Jr., Stanford University.

Wednesday, March 22—Endocrinology. Dr. Roy Hertz, National Institutes of Health.

Thursday, March 23—Dermatology. Dr. Marcus R. Caro, Cook County Hospital, Chicago; Dr. Don L. Fuhrman, University of Missouri School of Medicine, Kansas City; and Dr. Robert R. Kierland, Mayo Clinic.

Friday, March 24—Psychiatry. Dr. Eugene L. Bliss, University of Utah, and Dr. Thomas H. Holmes, University of Washington, Seattle.

Advance registrations are requested. The fee for the entire course is $80, and doctors who can come for shorter lengths of time will be charged $20 per day.

Exchange Transfusion—a Surgical Procedure

DOROTHY J. GILDEA, M.D., and PAUL C. CUNNICK, M.D.
DAVENPORT

Ever since 1925, when Hart and McDonald made medical history by performing the first exchange transfusion, the pediatrician, the obstetrician and the general practitioner have been fighting the battle of the dehydrated umbilical cord in dark corners of the nursery, handicapped by poor lighting and old instrument sets. Because of such difficulties, the simple procedure is often dreaded, and either it is postponed or the baby is hopefully treated with ACTH. Sometimes the transfusion is started and only partially completed, or a needed repeat transfusion is left undone.

We refer not only to exchange transfusions for infants with blood incompatibilities but also to transfusions for premature infants with hyperbilirubinemia. The procedures are also useful in removing toxic substances from blood and tissues in acute poisonings of children and adults. Exchange transfusion has been used in the treatment of sodium chlorate poisoning, Chloramine T and analine dye poisoning, Butazoladin problems, isoniazid poisoning, excess ingestions of aspirin, and barbiturate and methyl salicylate intoxications.

Exchange transfusion is a more practical and widely applicable method of removing certain toxins from the body than is hemodialysis through the use of the artificial kidney. The amount of blood used is determined by a set formula.[1]

Erythroblastosis fetalis, however, represents the primary indication for an exchange transfusion. The treatment of erythroblastosis is aimed at preventing the two dangers threatening the infant: (1) invisible brain damage (kernicterus) which is felt to result from hyperbilirubinemia, and (2) death from anemia or its sequelae.

Allen and Diamond have shown that kernicterus is associated with high serum levels of indirect bilirubin, usually above 20 mg./100 ml. Kernicterus not only is the cause of most erythroblastosis deaths, but also may produce permanent neurological damage in many infants who do not die. This damage is believed to account for as many as 10 per cent of all cases of cerebral palsy.

In 1925, in the first patient transfused, Hart and McDonald drew the blood from the longitudinal sinus, and injected new blood into the saphenous vein. In 1944, Alexander S. Wiener and I. B. Wexler performed their exchange transfusion by withdrawing blood from the radial artery and replacing it through the saphenous vein. In 1947, Louis K. Diamond and his co-workers inserted a polyethylene catheter into the umbilical vein. The Diamond method subsequently became very popular, and now is the procedure done by most pediatricians and general practitioners.

In 1948, Douglas P. Arnold and Kenneth M. Alford introduced a new technic for replacement transfusion in the treatment of hemolytic disease of the newborn infant.[2] They inserted a plastic catheter through the great saphenous vein into the femoral vein, external iliac and up into the inferior vena cava. This is the method that we have been using in Davenport since 1954.

In almost all of the articles on replacement transfusions, it is stated that the procedure is relatively simple when a well-trained team undertakes it. In most centers this team consists of a pediatrician and a pediatric surgeon. In many places, however, and especially in private practice, there is no such team. The pediatrician, who usually has limited manual skill and has infrequent occasions for exercising it, is forced to deal with emergency situations. He often has poor equipment and usually undertakes the procedure in a corner of the nursery. Frequently, he doesn't complete it, but if he does finish, the doctor, the baby and the nurses are exhausted.

For the above reasons, we feel that in private practice a surgeon should manage the technical aspects of the transfusion, using the operating room with its lights, oxygen, suction, sterile equipment, trained nurses, and the other apparatus and personnel that are needed in an emergency.

In 1954, one of us (Dr. Gildea) decided that she had fought her last battle with a dehydrated umbilical cord. Arnold and Alford had just reported their method, and looked at from a surgical standpoint, their technic seemed more logical than the blind procedure in which one tries to push a catheter into an umbilical vein that may have been thrombosed or cut too short. Thus, the two of us selected a set of instruments and obtained several catheters of different sizes. Then we made arrangements to use the operating room, so that we might do our next exchange transfusion under ideal conditions. We have continued doing transfusions in this manner for the past six years.

PROCEDURE

The baby is placed on a covered hot water bottle on a "Y" circumcision board. The legs are taped

Dr. Cunnick made this presentation at the meeting of the Iowa Academy of Surgery at Lake Okoboji, September 9, 1960.

to the board, and the inguinal area is prepped with Phisohex. A short incision is made parallel to Poupart's ligament, and the long saphenous is dissected out, as one does in doing a high ligation. The femoral bulb is identified. Two plain catgut ligatures are placed around the long saphenous vein just distal to the bulb. Then, using fine-pointed eye scissors, one makes a nick in the wall of the vein, and inserts the catheter up to the vena cava. The two catgut ligatures are then tied, and the exchange transfusion is started.

Initially, 30 cc. of blood is withdrawn. Then, by alternately withdrawing and replacing 10 cc. increments, one uses the entire unit of fresh blood. Following each 100 cc. of blood, 1 cc. of 10 per cent calcium gluconate is given slowly through the same tubing. After the exchange transfusion has been completed, the catheter is left in place until it is certain that the bilirubin level has started to fall. If necessary, a second and a third transfusion can be accomplished through the same catheter.

COMPLICATIONS

The commonest complication that we have encountered during the past six years has been a post-transfusion swelling of the lower extremity in which the catheter was inserted. This swelling occurs at any time from 1½ to four days after the procedure. When the catheter has completely filled the lumen of the vein, swelling will usually occur within 36 hours. When the swelling has come on later, we have felt that the cause has been a phlebitis in the vein. In both cases, the swelling will subside if one uses conservative therapy. One case has been reported in which an ascending thrombosis involved the inferior vena cava and renal veins following a cut-down and the insertion of a polyethylene tube. The tube had been in place for 52 hours.[3]

A second complication is cardiac arrest during the procedure. Bradycardia during the procedure is not uncommon, and the cause is not always known.

CASE REPORTS

The following are illustrative cases.

Case 1. D. W. was a full-term white male infant born of a mother (gravida 5, para 5) whose two previous children had received small exchange transfusions of 100 cc. each, in another city. The cord blood bilirubin was 19 mg. per cent, and the hemoglobin 9 Gm. The baby had been born with a marked jaundice.

Exchange transfusion was started within two hours after delivery. The catheter had been inserted into the vena cava via the left long saphenous vein. After 250 cc. of blood had been exchanged, the procedure was stopped momentarily while we waited for a new syringe. Dr. Gildea, who was monitoring the heart and giving oxygen by mask, noticed that the heart had suddenly stopped. Immediate pressure was applied through the abdomen and diaphragm, but without results. The chest was compressed, but also without results. Then, using the knife in the cut-down set, Dr. Cunnick opened the chest. The heart was seen to be at a complete standstill. Massage was started, and after a dozen compressions, the heart started again. The chest was closed, with a catheter in the pleural space. The catheter was removed from the leg, and the baby was returned to the incubator.

Twenty-four hours later, the bilirubin was still 19 mg. per cent. A No. 20 catheter was placed in the right leg, and this time 500 cc. of blood was exchanged without difficulty. The bilirubin promptly came down following this second procedure. This child is now two years of age, and the only residuals found by the Department of Pediatrics at SUI are a spastic Achilles tendon and a spastic right upper extremity. There is no apparent mental defect.

Case 2. C. W. was a 4 lb., three-day-old premature of 7½ months' gestation, with hyperbilirubinemia of the premature and a fractured femur. The bilirubin rapidly rose from 12 to 22.5 mg. per cent in a 12-hour period.

A No. 22 catheter was placed in the left long saphenous vein. It was noticed that the common femoral was the same size as, or slightly smaller than, the catheter that was being used. Because of the patient's size, a 320 cc. exchange was done without difficulty. After the catheter had been in place for 36 hours, the foot began to swell, but following removal of the catheter, the edema subsided.

Case 3. W. B. was a full-term male infant with a negative Coombs and a rapidly rising bilirubin as the result of an ABO incompatibility. Thirty-six hours after delivery, a No. 20 catheter was placed in the left saphenous vein. A 500 cc. exchange transfusion was completed. Because of the very slow fall of the bilirubin titer, the catheter was left in place for four days before removal. On the fifth day, the entire left leg was swollen. It was treated conservatively, and it slowly returned to normal over the next three months.

Case 4. D. B., a 19-month-old white male, had been given 86 grains of aspirin over a 40-hour period. When first seen, the infant had normal basic chemistries, except for the blood pH, which was 7.0, and the blood salicylate level, which was 40. He was comatose and had very rapid, blowing respirations. A catheter was inserted into the left long saphenous and threaded into the vena cava. An exchange of 1,500 cc. of blood was made before he became reactive and his respirations became quiet.

SUMMARY

1. The indications for an exchange should be determined by the pediatrician.

2. An exchange transfusion done for any reason should be classified as a surgical procedure, and

should be performed by someone who has been trained in surgical technic.

3. The replacement transfusion should be done under surgical conditions, with adequate light, instruments and assistance.

4. Preferably, the pediatrician should monitor the heart, lungs and reactions of the infant. The surgeon should do the cut-down, and place the catheter in the vena cava. The nurse should record the amounts of blood put in and taken out.

5. Four cases illustrative of this procedure have been presented.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

AN 8½-YEAR-OLD GIRL was transferred to University Hospitals from another hospital because of hematuria, anemia and thrombocytopenia. Her illness had begun 17 days previously, with loose and frequent bowel movements and nausea. After six days, she had developed hives, generalized pruritus, puffiness of the face and swelling of the hands. For this, she was treated with Aristocort. Several days later she had begun to complain about constant, mild frontal headaches, anorexia and nausea. Diarrhea continued, and she became pale and weak. On the day before her admission to a local hospital, her skin and eyes had appeared yellow, and her urine was noted to be scant, tea-colored and strong-smelling.

Two years prior to her admission, she had had mild encephalitis following the appearance of a macular rash. Two months preceding her present illness, intravenous pyelograms, a barium enema and upper-gastrointestinal x-rays had been ordered because of recurrent abdominal pain. All had been normal. No abnormal findings were reported by the local physician, other than mild periorbital edema and some edema of the hands.

A urinalysis revealed 4+ albumin, many red and white cells, and between 40 and 50 granular casts. The hemoglobin was 5.6 Gm./100 ml., the total bilirubin was 1.7 mg./100 ml., and the direct-reacting bilirubin was 0.1 mg./100 ml. The serum glutamic oxaloacetic transaminase was 75 units/ml.

Two days after admission to the local hospital, a blood urea nitrogen was 91 mg./100 ml. The next day, the youngster developed petechiae over her face, arms and trunk. A platelet count was 34,000/cu. mm., and an examination of the bone marrow revealed rounded megakaryocytes that were poorly granulated and showed little or no evidence of platelet formation. Her urinary output was only 125 ml./day.

She received 500 ml. of blood. A lupus erythematosus preparation was negative. Blood cell fragilities were normal. The patient was given cortone acetate, intravenous fluids and another unit of blood. Next day, her platelet count was 23,000/cu. mm. The blood urea nitrogen rose to 113 mg./100 ml., and the urinary output was only 65 ml./24 hrs. On the day before her transfer to S.U.I. Hospitals, her hemoglobin was 5.3 Gm./100 ml., and her urinary output on that day was 45 ml.

On admission to this hospital, the patient appeared pale, acutely ill and apprehensive. A few tiny petechiae were present over the face and chest. The blood pressure was 100/68 mm. Hg. There was a grade II systolic murmur heard over the entire precordium. The rest of the physical examination was within normal limits. Urinalysis showed 4+ albumin, and many red cells and granular casts. Her weight (63 lbs.) was 10 lbs. above normal. There were 45,000 platelets per cubic millimeter, and the hemoglobin was 6.8 Gm./100 ml. The total white blood cell count was 19,700, and the differential showed 23 per cent band neutrophils, 52 per cent segmented neutrophils, 9 per cent lymphocytes, 13 per cent monocytes, 2 per cent myelocytes and 1 per cent metamyelocytes. There were three nucleated red blood cells per 100 white cells. The red cells showed marked hypochromia, polychromatophilia, anisocytosis, poikilocytosis and basophilic stippling. The reticulocyte count was 8.8 per cent. The erythocyte sedimentation rate was 83 mm./hr. No urine was excreted during the first 48 hours following the patient's admission. Oral intake was discontinued, and hydrocortisone treatment was started.

On the morning after her admission, the patient had a left-sided seizure, followed by generalized convulsions and coma. Her blood pressure preceding the seizure was 100/60 mm. Hg. She was heparinized intravenously. She developed a left-side hemiplegia. Her serum electrolytes were then as follows: sodium, 135 mEq./L.; potassium, 5.5 mEq./L.; carbon dioxide, 18.1 mEq./L.; chloride, 90 mEq./L. The blood urea nitrogen was 230 mg./100

ml., and the creatinine value was 14.5 mg./100 ml.

Dialysis and ultrafiltration on the artificial kidney was started, and was continued for seven hours. The blood urea nitrogen and creatinine values eight hours after the dialysis were 105 mg./100 ml. and 8.6 mg./100 ml., respectively. After dialysis, her weight was 59 lbs. She improved gradually, and 12 hours later she excreted her first urine. Over the next several days, her urinary output returned to normal, with good concentrating power and a decrease in the number of casts and red cells. The neurologic abnormalities cleared completely during the next three days. Treatment with hydrocortisone and heparin continued.

She improved to such an extent that oral fluids, diet and oral Prednisone were started, and heparin was discontinued one week after admission. However, she developed continuous nausea and vomiting. Three days before her death, her blood pressure rose to 162/112 mm. Hg, and hematuria reappeared. She became irritable, and had another left-sided seizure followed by several other generalized seizures and then coma. Papilledema was observed for the first time, and the pulse rate increased to 140/min. A cardiac gallop rhythm appeared, and there was a grade III systolic murmur over the entire precordium. The liver enlarged to the umbilicus, and intravenous digoxin was given. A blood urea nitrogen was 160 mg./100 ml., the creatinine was 8.6 mg./100 ml., and the serum potassium was 3.6 mEq./L.

After the second convulsion, it was observed that the left side of the patient's body, from the nipple down, and extending from the midline anteriorly to the midline posteriorly, showed a purplish discoloration and was colder than the rest of the body. All of the pulses in the left leg were diminished. Treatment with intravenous hydrocortisone, penicillin and Chloromycetin was instituted. Although the patient's neurologic deficits cleared, she continued to be very irritable, and her urinary output fell slightly. Rales and dullness of the right posterior mid-lung fields were observed, and the chest x-ray showed extensive infiltration throughout the right lung. She developed hemoptysis, and by the next day there were rales in the left lung as well. The patient died 17 days after admission and 33 days after the onset of her illness.

SUMMARY OF CLINICAL DISCUSSION

Dr. John Opitz, resident, Pediatrics: The patient was an 8½-year-old girl who had been transferred from a local hospital to the Department of Pediatrics at S.U.I. To the detailed history transmitted to us by the local physician and summarized in the protocol, let me add that at the onset of the illness, the girl was discovered playing with roach poison containing small amounts of arsenic, but both of her parents are fairly sure that she ingested none of the powder. The only other possible exposure to toxins had occurred two weeks before the onset of the illness, when the girl had helped her father paint a large radio antenna with aluminum paint in the basement of their home.

The child was transferred to us with a referring diagnosis of idiopathic thrombocytopenic purpura and acute glomerulonephritis. In considering the history that accompanied the child, we thought it obvious that we were dealing with a vicious and rapidly progressive form of renal failure, as evidenced by the following facts:

1. Symptoms suggestive of uremia, with nausea, vomiting, diarrhea, irritability and occasional mild headaches
2. Gross hematuria, albuminuria and the presence of many casts in the urine
3. Progressive azotemia
4. Severe anemia (reflecting blood loss as well as hemolysis).

Locally, the child had been treated with intravenous fluids and steroids, and had been given several blood transfusions. One of the reasons for her transfer to Iowa City had been the availability, here, of an artificial kidney, which her parents and her local physicians hoped would tide her over the acute episode of renal failure.

On admission, the child looked surprisingly well. Her blood pressure wasn't unusually high, there was no evidence of edema on physical examination, and she impressed us as being very intelligent and vivacious, but quite frightened. Her pupils were dilated. She was placed on an acute renal-failure regimen, with limitation of oral intake to butterballs and rock candy.

The blood picture appeared to us quite characteristic, for it coincided with the description of that aspect of the illness presented in the literature.[1] By our reading, we were alerted to the serious nature of the illness, and we halfway expected the disastrous central nervous system complication that occurred on the morning after her admission. Shortly before the onset of the seizures, the blood urea nitrogen and creatinine values indicated a serious degree of azotemia. Furthermore, the girl then became anuric. At that time we began treatment with large doses of intravenous hydrocortisone, and on the theory that the central nervous system signs could be reflecting a thrombotic process, we also heparinized her. She required huge doses of Amytal to control the seizures.

The patient continued to deteriorate rapidly, and toward evening we again considered the advisability of placing her on the artificial kidney. From a hematologic viewpoint, we found a precedent in the second case of Wile and Sturgeon,[2] a 10-month-old infant with this illness who improved after two exchange transfusions.

Dr. Mason will review the indications for the use of the artificial kidney in this case.

Dr. Edward E. Mason, Surgery: The patient seemed to be overweight, and one of the things we

very frequently do with the artificial kidney is to wring water out of a patient. Thus, we had the pressure within the kidney coil high so that it would force water out of the blood. The artificial kidney is also frequently requested because the serum potassium is high, but this was not a problem at that time. A third reason for which the device is sometimes used is that the patient has a high blood urea nitrogen. Now we don't believe that urea alone is particularly dangerous, but we feel that whenever a patient has a high blood urea nitrogen, there must be excesses of many other waste products. These, then, are the direct reasons for use of the artificial kidney.

There are also some incidental advantages to be gained by using it. A transfusion is very easy to perform while you are using the kidney, for you are taking blood out continuously and replacing it continuously. You can bleed off dilute blood from the system and replace it with bank blood. This is especially convenient if the patient has a severe anemia, for you can take off dilute blood and replace it with blood having a normal hemoglobin. After we remove blood, we can separate and infuse the cells, so that the hemoglobin and the red cell mass are increased, and the plasma volume is decreased. Therefore, the patient isn't overloaded, as far as his blood volume is concerned.

Then too, we always heparinize the patient. It was felt that in this instance the heparinization would be beneficial, even though the patient had a bleeding tendency. It was our belief that generalized intravascular thrombosis was removing a variety of blood-clotting factors and was resulting in poor coagulation, Thus, we concluded, heparin would be rational therapy as long as severe bleeding didn't occur.

Dr. Opitz: Following dialysis, the patient remained gravely ill for 24 hours, but thereafter she began gradually to improve. Consciousness returned slowly, and her neurologic difficulties disappeared. Her urinary output resumed, and it increased daily until it reached a maximum of 2,000 cc. Please observe, however, that her blood urea nitrogen and creatinine values remained high. Her blood picture remained unaltered, and a persistently low hemoglobin necessitated several transfusions of washed, packed red cells. Bleeding difficulties required the discontinuance of the heparin.

The patient improved to such an extent that intravenous fluid administration and hydrocortisone were discontinued, and instead she was placed on oral Prednisone. However, the improvement was transitory. She began to develop intractable nausea and vomiting that didn't respond to parenteral Compazine. In this way she lost several doses of the Prednisone. The fluid and electrolyte balance, as well as the azotemia, became a problem again.

Three days before her death, we thought that we were able to detect signs of relapse. She again complained of headache, nausea, vomiting and loose stools that contained blood. Her blood pressure became elevated, she developed papilledema, her urine became bloody and contained many casts, and her urinary output fell slightly. That same night, she became confused and finally unresponsive. She again suffered a left-sided convulsion, and at that time lost conjugate gaze. She developed tachycardia, tachypnea, hepatomegaly and a gallop rhythm. Thus we were led to suspect borderline congestive heart failure. She was digitalized and sedated, and again was placed on intravenous steroids.

Her neurologic deficits cleared with amazing rapidity. By the next noon she was well-oriented again. However, during the afternoon she became profoundly weak and began to cough. Examination of the chest revealed rales and extensive consolidation of the right lung. This was confirmed by x-ray. The antibiotic therapy was altered to the administration of massive doses of intravenous aqueous penicillin and Chloromycetin, all to no avail. By the next day, her cough had progressed to hemoptysis, and the infiltration had spread rapidly to the left lung as well. There was no fever or increase in the white blood cell count. She died that afternoon, 17 days after admission and 33 days after the onset of the illness.

Dr. Faruk Tutunji, resident fellow, Internal Medicine: What was the temperature?

Dr. John C. MacQueen, Pediatrics: The patient was afebrile.

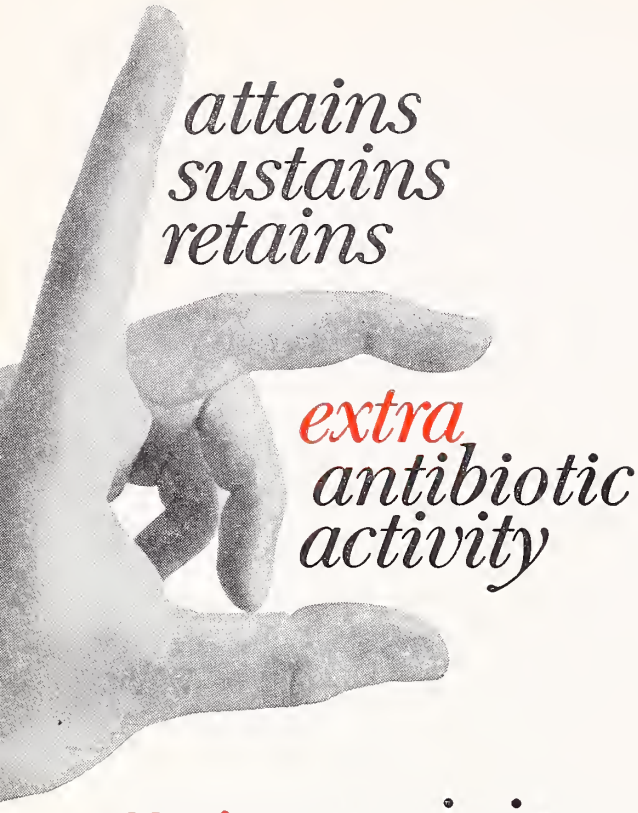
The students' analysis of the protocol will be presented by Duane Bork.

Mr. Duane Bork, junior ward clerk: Our initial impression of this case was that of a nephritis. The classic features of an acute glomerulonephritis were apparent, but we were unable to explain the hematological findings of thrombocytopenia, sudden severe anemia or reticulocytosis on that basis. Thus, we concluded that it wasn't glomerulonephritis alone, though it might be glomerulonephritis and some concomitant process.

We next considered the possibility of systemic poisoning. Mercury, lead, arsenic, benzene, carbon tetrachloride and other chemicals can produce a clinical picture of marked renal, central nervous system, cardiac and hematopoietic damage. Until Dr. Opitz told of the child's contacts with aluminum paint and roach poison a few moments ago, we had no information of that sort, and thus we were indulging in mere conjecture.

Then we considered the possibilities of overwhelming infection or septicemia, but we didn't know what the patient's febrile course had been, and thus we tended to rule out this explanation. Now, we learn that she was afebrile.

Finally, we considered the collagen diseases such as polyarteritis, lupus, dermatomyositis and thrombotic thrombocytopenic purpura, which can present clinically as manifestations of multiple organ systems. Two of these diseases fit the picture quite



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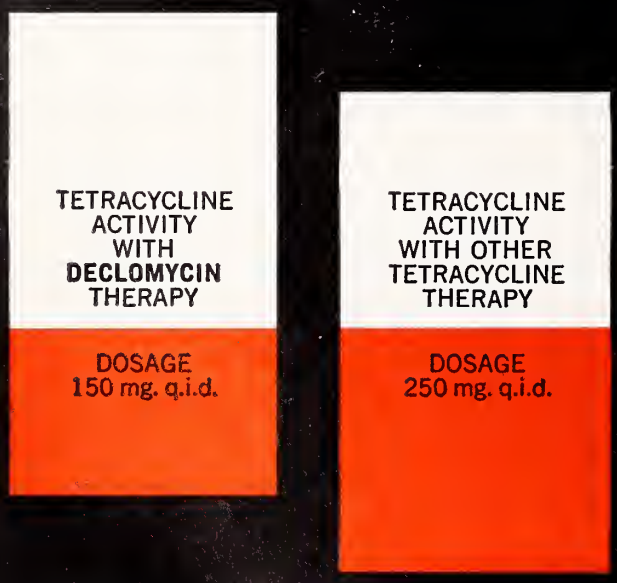
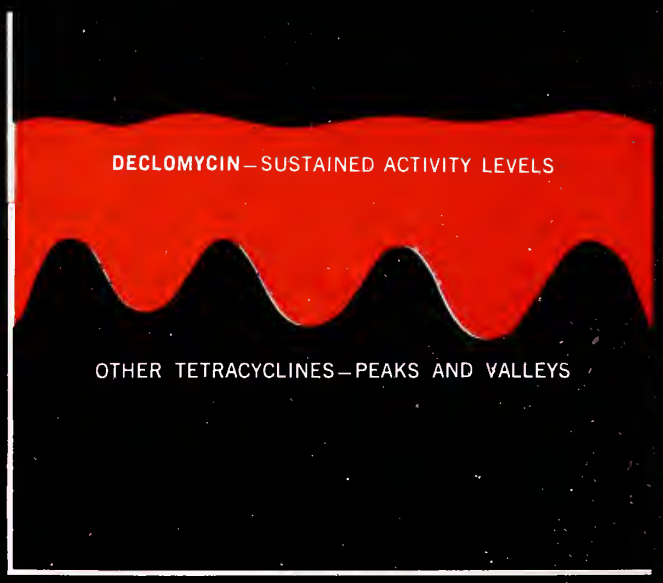


POSITIVE ANTIBACTERIAL ACTION



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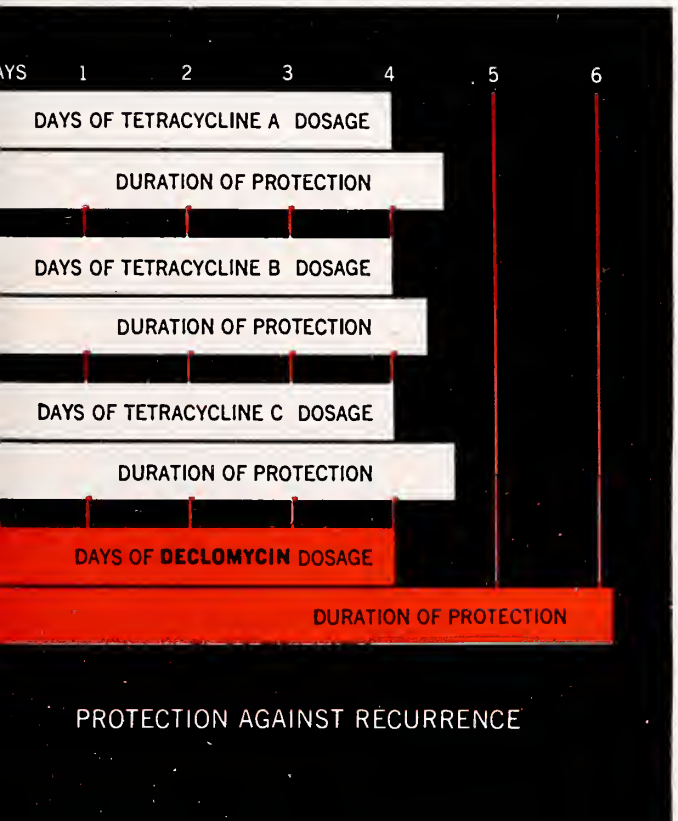

CAPSULES, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

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PRECAUTIONS—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

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well. A diagnosis of fulminating systemic lupus erythematosus could account for all of the signs and symptoms. However, the LE cell phenomenon was negative. According to Cecil, some patients with unequivocal lupus have negative reactions to LE cell preparations. But according to Wintrobe, the test is both sensitive and specific. So, without the support of a positive reaction to the test, we hesitate to make this diagnosis. Also, there was a lack of joint involvement, and there were no mucocutaneous lesions.

Thrombotic thrombocytopenic purpura was our other possibility. The description of this disease in Wintrobe's HEMATOLOGY is compatible with all the features described in the protocol, including anemia, thrombocytopenia, increased total bilirubin, marked renal damage, non-specific bone marrow findings, petechiae, leukocytosis with a leukemoid picture, and markedly bizarre transitory neurological signs and symptoms including convulsions, coma, hemiplegia and others.

Therefore, our diagnosis is a collagen disease—most likely thrombotic thrombocytopenic purpura, but possibly fulminating systemic lupus. Death, we think, was due to pulmonary edema, congestive heart failure, severe renal disease, uremia, hypertension and terminal pneumonitis.

Dr. MacQueen: Well done! If throughout your medical career you approach each problem as carefully as you approached this one today, I'm sure you will do well.

Dr. Frederic W. Stamler, Pathology: The morbid anatomical lesions in this case have been tentatively classified under the category of thrombotic thrombocytopenic purpura, one of the diseases discussed by the student representative. This diagnosis was made with certain reservations because the lesions demonstrated in this case aren't altogether typical.

This disease was first described in 1925 by Moschcowitz[3] as an ailment characterized by very widespread thrombosis of capillaries and precapillary arterioles. In 1936, four additional cases were reported by Baehr and his associates,[4] with the interpretation of platelet thrombosis as a cause of the occlusion of the vessels. These authors also stressed thrombocytopenia as a part of the clinical picture. Nothing much further was recorded concerning this disease until 1942, when Altschule reported a case in which endothelial disease preceded the formation of thrombi in the small vessels.[5] During the next few years there were other reports of this disease, including one by Carter in which the endothelial changes were noted and material was found similar to that which occludes the vessels in paravascular locations.[6] Carter postulated that this probably represented extrusion of thrombotic material through diseased vessel walls. Several others made very similar observations.

In 1950, Ira Gore reviewed five such cases at the Armed Forces Institute of Pathology, and very materially extended our knowledge about the nature of the lesions in the vessel wall.[7] He concluded that the initial lesion is the deposition of hyaline material outside the endothelial layer of the vessel walls. At this time the endothelial layer is still intact and the lumen is patent. As this material accumulates in larger quantities, there is a break in the endothelium at some point, stimulating the formation of platelet thrombi to occlude the involved vessels. Thereafter there are various sequences of events.

One further development worthy of note was the report of Orbison,[8] in 1952, showing by serial sections that aneurysm formation in small vessels is a conspicuous feature of this disease. He demonstrated that the aneurysms involve the precapillary segment of the arteriole, and in some cases extend into the capillaries themselves. Since that time, increasing numbers of case reports have been published, but little has been added to our understanding of the disease processes.

Our experience here in Iowa City has been that the disease is quite rare. Indeed this is the first time that we have considered making such a diagnosis at autopsy. In regard to this particular case, I can report that the lesions of the sort that I have described were found in great profusion in the kidneys. They involved particularly the glomerular arterioles, but also other arterioles. No such diseased and occluded vessels were found elsewhere. These findings are in contrast with those reported in most of the published cases. In them, the lesions were very widespread, involving particularly the kidneys, heart and brain, and usually many other organs.

Steroid therapy has been used with some degree of success in cases of this disease, and it was employed on this patient. We can't be sure what effect it may have had on the appearance and development of the lesions. We might postulate that vascular lesions of some organs had been masked or overcome by the effects of steroid therapy. Certainly the degree of mental dysfunction shown clinically might well indicate that there had been some thrombotic cerebral involvement, but I was unable to show any.

I believe the patient's immediate cause of death was massive pulmonary hemorrhagic effusion—one that literally filled both lungs with bloody fluid. There was very little histologic evidence of pneumonitis, though in the culture of lung tissue a species of pseudomonas organism was grown, and perhaps infection did play a part in causing pulmonary hemorrhage. There were also numerous small hemorrhages of the brain, particularly in the cerebellum, but also scattered through the cerebrum. Some of these were associated with focal encephalomalacia. There were numerous petchiae and ecchymotic areas elsewhere in the body, particularly in the skin and subcutaneous tissue, but also in the viscera.

Dr. MacQueen: How would you explain the hemorrhage in the lung?

Dr. Stamler: I'm not sure what the platelet level was terminally. Do we have that information?

Dr. Opitz: The platelet count of 45,000 was, I believe, the highest that she reached.

Dr. Stamler: I think that the thrombocytopenia was probably severe enough to allow hemorrhage to occur. Why bleeding should have been so much more extensive in the lungs than elsewhere, I can't say, but we do see massive pulmonary hemorrhage in various disease states of the lungs, particularly in children. It is quite possible that an element of pulmonary infection was involved, and venous stasis consequent to cardiac failure probably was also a factor. Heparin therapy had been discontinued several days before the patient's death, and thus it is unlikely that excessive heparinization was the cause of bleeding. Heparin therapy may indeed have helped protect her against hemorrhage by promoting more normal platelet function, and with the discontinuance of this therapy, hemorrhage may have resulted from a loss of normal hemostatic activity of the thrombocytes.

Dr. MacQueen: A review of all patients who have had this particular disease shows that the majority of them have been adults, and that the majority of them have had clinical courses quite different from that of the child whose case has been presented here today.

Dr. Joynt, would you discuss the signs of neurological disease that have been reported in adults with this form of illness?

Dr. Robert J. Joynt, Neurology: This disease has often been mentioned in the neurological literature because of the frequency of involvement of the central nervous system in such cases. As has been pointed out, the brain, the heart and the kidney seem to be the organs most usually affected. In regard to the nervous system, the characteristic lesions have a predilection for the grey matter of the brain, so that the signs attendant upon the disease include convulsions, which may be either generalized or focal; aphasia; cortical blindness; and most often disturbances in responsiveness. The last of these may consist of irritability, drowsiness, stupor or deep coma.

In a recent report on 10 patients with this disorder, six were said to have presented with neurological difficulty of some type as the first sign of the illness. The pathological findings are as Dr. Stamler has indicated. It is remarkable that often the extent and degree of severity of the pathological changes are much less severe than would be expected on the basis of the clinical neurological findings. The signs and symptoms may be transient and may clear up while the patient is under therapy. But usually they recur, and the terminal episode is frequently marked by a lapse into deep coma. The spinal fluid is usually clear. Occasionally there is xanthochromia, but no actual blood, in the spinal fluid.

In summary, the neurological involvement comes from small petechial hemorrhages and small occlusive episodes within the brain, but no large vessels are thrombosed, and there are no areas of massive hemorrhage.

Dr. MacQueen: This is a remitting illness. The signs of disease may recur at intervals of many months. Such patients frequently are diagnosed as having had small cerebral vascular accidents. Thrombotic thrombocytopenic purpura is thus often a prolonged, recurrent disease. The acute course and the severity of the disease in the patient whom we have discussed today were no doubt caused at least in part by the renal involvement.

Dr. F. D. Fisher, Internal Medicine: Was there any heart lesion to explain the murmur?

Dr. MacQueen: The child had a severe anemia throughout the illness. The murmur was presumed to have been hemic.

Dr. Sidney E. Ziffren, Surgery: How often do you see this disease without fever?

Dr. MacQueen: The disease is so variable that no clinical sign is uniformly present. The majority of patients with the disease do not have fever.

Dr. Ziffren: What about the statement in the protocol that there was a sharply demarcated purplish discoloration of the left half of the patient's body? To what was that due?

Dr. Opitz: I'll admit that I included that observation in the protocol to "bait" a neuro-anatomist or a neurophysiologist. I have no explanation for that extraordinary phenomenon, though I assure you it really was present. Both Dr. MacQueen and I saw it. On the basis of the distribution of the discoloration, I would suspect a central nervous system lesion involving either brain, brain stem, cord or autonomic nervous system, perhaps on a vasospastic basis.

Dr. MacQueen: We didn't know, and we don't know.

Dr. Ziffren: Do all of these patients die?

Dr. MacQueen: Essentially all the reported cases of children have been fatal. A few adults with mild cases of the disease have recovered. All types of therapy have been used. One report may give the impression that splenectomy is effective, and another makes a strong case for steroids.

Dr. Ziffren: Was the diagnosis made before death?

Dr. MacQueen: Yes.

Dr. Ziffren: Was there any thought of doing a splenectomy?

Dr. MacQueen: Two things made us reluctant to do a splenectomy. First, the child had been heparinized, for protection against what we regarded as the greatest threat against her life, renal shut down. She was in very dire straits throughout this illness. Second, a review of other case reports showed that splenectomies had been done when

the patients had responded to other therapy. Splenectomies were done, in those instances, to achieve further improvement.

Dr. Ziffren: According to the protocol, the patient improved.

Dr. MacQueen: The patient was critically ill throughout this period of disease.

Dr. Ziffren: I don't mean to argue. I have asked because we often do splenectomies on patients who are bleeding massively.

Did you think anything would save her life?

Dr. MacQueen: No. We were trying very hard, but her renal problem seemed to be beyond our therapeutic measures.

Dr. Ziffren: What about the cortisone?

Dr. MacQueen: I'm sure that if you put together all the conclusions of the case reports on this disease, you would conclude that steroid therapy is best. The effectiveness of splenectomy in these same case reports is not impressive.

You might well ask, "Why was the patient heparinized?" Heparin has been used in adult cases, and on occasion has seemed to interrupt the course of the disease. We weren't sure what we could do by means of dialysis. We were interested in removing some of the presumed offending antibodies, and thus the replacement transfusion was given.

The point to be made is that there is no exact pattern of therapy. When the patient has this diagnosis, one is faced by a 95 per cent probability of failure. The treatment approach is dictated by the type of involvement and by the therapeutic methods that seem best for the particular case. In this patient, we thought the major problem was renal failure, and that impression has been borne out by the pathological findings.

Student: Was the point made that exchange transfusion helped these patients?

Dr. MacQueen: Exchange transfusions presumably help to dilute some of the undesired antibodies. The exchange transfusion, as given to this patient, resulted theoretically in a 50 per cent dilution of endogenous antibodies.

An acute respiratory illness usually precedes the onset of the acute symptoms. Presumably this illness precipitates a hypersensitivity. This is the notion that has been presented by Singer and his co-workers, and there are few who would refute this explanation as to the cause of the disease.

In brief summary, this is a disease that has a basic triad of findings: hemolytic anemia, thrombotic thrombocytopenia, and bizarre neurological findings. In the case we have discussed today, renal failure was the major problem, and it was treated energetically, but this form of therapy was inadequate. It could not cope with this almost uniformly fatal disease.

SUMMARY OF NECROPSY FINDINGS

The principal anatomical abnormalities were those involving lungs, kidneys and brain. The pulmonary air spaces were almost completely filled, bilaterally, with a bloody effusion, with minimal evidence of pneumonitis. There was widespread renal disease, characterized by thrombotic and degenerative lesions of glomerular arterioles with associated tubular degeneration. The brain showed numerous petechiae and small foci of softening, without evidence of vascular thrombosis. There were numerous petechiae and ecchymoses of skin and subcutaneous tissue, as well as occasional visceral lesions of a similar nature. The liver and spleen were enlarged and congested, but not otherwise remarkable. No abnormalities of the hematopoietic bone marrow were noted. Enterobius vermicularis organisms were noted in the lumen of the appendix as an incidental finding.

The renal lesions were of the type described in thrombotic thrombocytopenic purpura, but more severe than in most reported cases. The typical thrombosing vascular lesions of other organs were not demonstrable in this case. It was impossible to determine whether such lesions might have been masked by the effects of steroid therapy. The cerebral lesions were rather inconspicuous in relation to the severity of the clinical symptoms of cerebral disease. The very extensive pulmonary hemorrhage was best explained on the basis of a hemorrhagic diathesis due to a deficiency of thrombocytes. The possibility was also considered that steroid therapy may have repressed and obscured the response to a pulmonary infection significant in the causation of pulmonary hemorrhage.

The immediate cause of death was respiratory insufficiency due to massive hemorrhagic pulmonary effusion.

ANATOMICAL DIAGNOSES

Thrombotic thrombocytopenic purpura, with extensive renal involvement

Massive hemorrhagic pulmonary effusion, bilateral, with minimal pneumonitis

Focal hemorrhage and early encephalomalacia, multiple, cerebrum and cerebellum

Purpuric hemorrhages, generalized

Congestive hepatomegaly and splenomegaly

Enterobiasis, appendix.

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Coming Meetings

In State

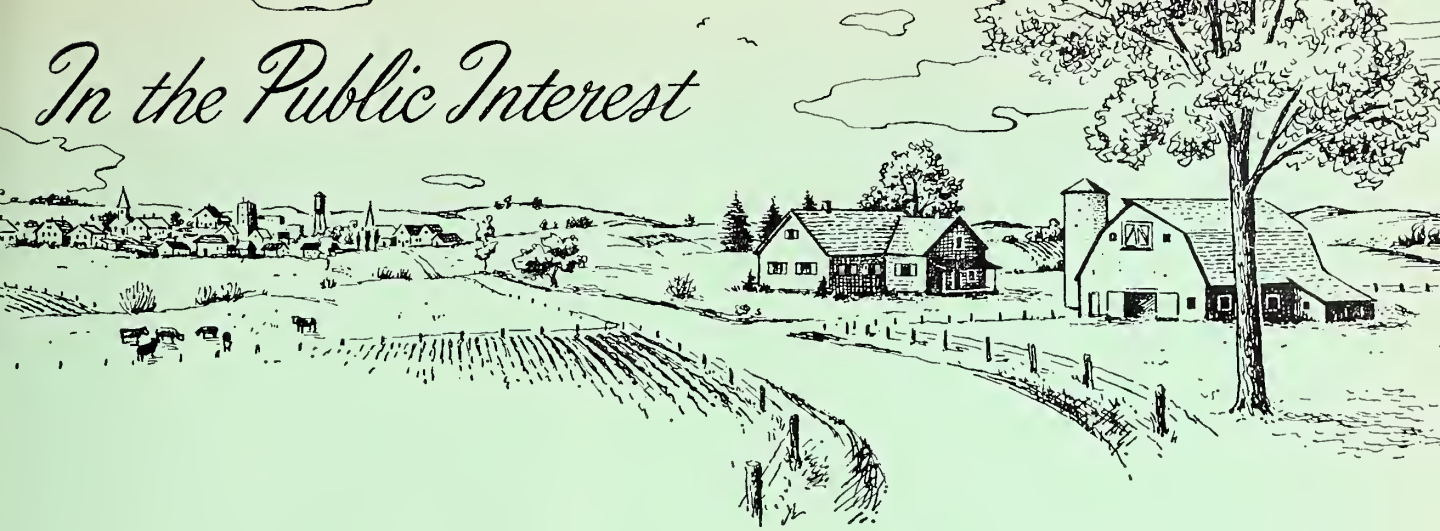
April 4-5	**Postgraduate Conference in Neurology.** Iowa City
April 7-8	**Raymond Blank Memorial Hospital Association Pediatric Conference.** Younker Memorial Rehabilitation Center, Iowa Methodist Hospital, Des Moines
April 23-26	**Iowa State Medical Society Annual Meeting.** Veterans Auditorium, Des Moines

Out of State

Mar. 1-4	**Diagnostic Cardiac Auscultation.** New York University Medical Center, New York City
Mar. 2	**Second Low-Beer Memorial Lecture.** University of California School of Medicine, Auditorium—S, Medical Sciences Building, San Francisco
Mar. 2-3	**Retinal Surgery.** University of California at Los Angeles
Mar. 2-4	**Diseases of the Nervous System in Children.** University of California, San Francisco
Mar. 2-4	**Pediatric Neurology.** University of California at San Francisco
Mar. 3-4	**Operable Heart Disease.** Presbyterian Medical Center, San Francisco
Mar. 5	**Western Regional Meeting, American College of Gastroenterology.** San Francisco, California
Mar. 6-8	**Pediatrics.** University of Kansas Medical Center, Kansas City
Mar. 6-9	**Sectional Meeting for Surgeons and Graduate Nurses (American College of Surgeons).** Hotels Bellevue-Stratford, Ben Franklin, and Sylvania, Philadelphia
Mar. 6-9	**Southeastern Surgical Congress.** Deauville Hotel, Miami Beach, Florida
Mar. 6-9	**Twenty-Fourth Annual Meeting of the New Orleans Graduate Medical Assembly.** The Roosevelt Hotel, New Orleans
Mar. 6-10	**Recent Advances in Cardiovascular Disease (American College of Physicians).** Mount Sinai Hospital, New York City
Mar. 6-10	**Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
Mar. 6-11	**Surgery of the Hand.** New York University Medical Center, New York City
Mar. 6-17	**Board of Surgery Review, Part II.** Cook County Graduate School of Medicine, Chicago
Mar. 6-17	**Fractures & Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 7-8	**Southwestern Pediatric Society Postgraduate Lecture Series.** Statler Hotel, Los Angeles
Mar. 7-9	**Management of Pain by Therapeutic Nerve Block.** University of California at Los Angeles
Mar. 8-10	**Conference on Keratoplasty.** Presbyterian Medical Center, San Francisco
Mar. 8-11	**Neurosurgical Society of America** (members and guests). Boca Raton, Florida
Mar. 9-11	**Eastern Conference of Radiology.** Lord Baltimore Hotel, Baltimore
Mar. 9-11	**Urology.** University of California, San Francisco
Mar. 10-11	**Psychiatry in Medicine.** University of California at Los Angeles
Mar. 10-12	**Annual Meeting, American Society of Psychosomatic Dentistry and Medicine.** Shoreham Hotel, Washington, D. C.
Mar. 11	**Orange County Heart Association Annual Symposium on Heart Disease.** Charterhouse Hotel, Anaheim, California
Mar. 11	**Perinatal Problems (Univ. of California, San Francisco).** Children's Hospital, Los Angeles
Mar. 11	**The Four R's of Fractures: Recognition, Reduction, Retention, Rehabilitation.** Presbyterian Medical Center, San Francisco
Mar. 11-12	**Anesthesia Section of Los Angeles County Medical Association 6th Annual Spring Postgraduate Meeting.** Statler Hilton Hotel, Los Angeles
Mar. 12	**Association of Bone and Joint Surgeons.** Acapulco and Mexico City, Mexico
Mar. 12-16	**29th Annual Alumni Postgraduate Medical Convention of the College of Medical Evangelists.** Ambassador Hotel and White Memorial Hospital, Los Angeles
Mar. 12-17	**American College of Allergists Graduate Instructional Course and Seventeenth Annual Congress.** Statler Hilton Hotel, Dallas
Mar. 13	**What's New in Orthopedics.** University of Kansas Medical Center, Kansas City
Mar. 13-15	**Allergy for General Physicians and Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 13-17	**Advances in Medicine.** Cook County Graduate School of Medicine, Chicago
Mar. 13-17	**Arthritis and Related Disorders.** New York University Medical Center, New York City
Mar. 13-17	**Internal Medicine: Selected Topics (American College of Physicians).** McGill University School of Medicine, Montreal, Quebec
Mar. 13-17	**Ophthalmic Pathology.** Armed Forces Institute of Pathology, Washington, D. C.
Mar. 13-18	**Electrocardiology.** New York University Medical Center, New York City
Mar. 13-24	**Obstetrics, General & Surgical.** Cook County Graduate School of Medicine, Chicago
Mar. 13-25	**Course in Laryngology and Bronchoesophagology.** Department of Otolaryngology, University of Illinois College of Medicine, Chicago
Mar. 14-18	**Twenty-Sixth Annual Congress North American Federation, International College of Surgeons.** Palmer House, Chicago
Mar. 15-19	**Diagnostic Radiology.** University of California, San Francisco
Mar. 16	**The Kidney (Fifth in the series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City
Mar. 16-17	**Gastroenterology.** University of Nebraska College of Medicine, Omaha
Mar. 16-18	**General Review Course for Practicing Physicians.** Presbyterian Medical Center, San Francisco
Mar. 17-18	**Pioneers Memorial Hospital, 11th Annual Medical and Surgical Postgraduate Assembly.** Pioneers Memorial Hospital, Brawley, California
Mar. 17-18	**Trauma for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 17-19	**Internal Medicine for Internists.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 18-21	**Missouri State Medical Association.** Hotel Muehlebach, Kansas City
Mar. 19	**Southern Regional Meeting, American College of Gastroenterology.** Jesse H. Jones Library Building, Texas Medical Center, Houston
Mar. 20	**Pulmonary Disease.** University of Kansas Medical Center, Kansas City
Mar. 20-22	**Dallas Southern Clinical Society.** Statler Hilton Hotel, Dallas
Mar. 20-22	**Refresher Course in Allergic Conditions.** New York University Medical Center, New York City

Mar. 20-24	**Advanced Clinical Electrocardiography.** University of Tennessee College of Medicine Lecture Room, Memphis
Mar. 20-24	**American Surgical Association.** Boca Raton Hotel, Boca Raton, Florida
Mar. 20-24	**Fourth Postgraduate Course in Medical Technology (University of Colorado School of Medicine and Colorado State Society of Medical Technologists).** Denver
Mar. 20-24	**Joint Manipulation.** College of Medical Evangelists, Los Angeles
Mar. 21	**Gastroenterology.** University of Kansas Medical Center, Kansas City
Mar. 21	**How to Listen to Detail Men (Seventh in the series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri
Mar. 21	**The Enigma of the Ovarian Tumor (Fifth in the series "General Medicine and Surgery").** The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas
Mar. 21-24	**Lederle Symposium (Iowa & Nebraska Chapters of AAGP).** Fontanelle Hotel, Omaha
Mar. 22	**Endocrinology.** University of Kansas Medical Center, Kansas City
Mar. 23	**Dermatology.** University of Kansas Medical Center, Kansas City
Mar. 23-25	**American Orthopsychiatric Association.** Statler Hilton Hotel, New York City
Mar. 23-25	**Endocrinology and Metabolism (American College of Physicians).** University of Virginia Medical Center, Medical School Auditorium, Charlottesville, Virginia
Mar. 24	**Physical Medicine.** University of Nebraska College of Medicine, Omaha
Mar. 24	**Psychiatry.** University of Kansas Medical Center, Kansas City
Mar. 27-29	**Urology for Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
Mar. 27-31	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 30	**Obstetrics.** University of Nebraska, Lincoln
April 3-8	**Thirty-Fourth Annual Spring Congress (Gill Memorial Eye, Ear and Throat Hospital and the Elbyrne G. Gill Eye and Ear Foundation).** Patrick Henry Hotel, Roanoke, Virginia
April 6-8	**American College of Surgeons, Section Meeting.** Fort Gary Hotel, Winnipeg, Manitoba
April 6-8	**Fourteenth Annual Spring Meeting, West Virginia Academy of Ophthalmology and Otolaryngology.** Greenbrier Hotel, White Sulphur Springs, West Virginia
April 9	**Problems in Therapy of Cardiac Disease.** Presbyterian Medical Center, San Francisco
April 9-11	**Southwest Allergy Forum.** Sea Island Hotel, Padre Island, On the Gulf, Texas
April 9-12	**Tennessee State Medical Association.** Read House Hotel, Chattanooga
April 9-13	**International Anesthesia Research Society.** Houston, Texas
April 10-12	**Clinical Reviews.** Mayo Clinic and Mayo Foundation, Rochester
April 10-12	**American Academy of Pediatrics.** Sheraton-Park Hotel, Washington, D. C.
April 10-12	**Otorhinolaryngology.** University of Kansas Medical Center, Kansas City
April 10-13	**Southwestern Surgical Congress** (AMA members only). St. Louis
April 10-13	**Ohio State Medical Association.** Netherland-Hilton Hotel, Cincinnati
April 10-14	**American Physiological Society.** Atlantic City
April 10-14	**American Society of Biological Chemists, Inc.** Atlantic City
April 10-14	**American Society for Experimental Pathology.** Atlantic City
April 10-14	**Postgraduate Course on Oral Pathology.** Armed Forces Institute of Pathology, Washington, D. C.
April 10-15	**Thirty-Fourth Annual Spring Congress in Ophthalmology and Otolaryngology and Allied Specialties.** Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia
April 10-22	**Gynecology, Office & Operative.** Cook County Graduate School of Medicine, Chicago
April 11-13	**Industrial Medical Association.** Biltmore Hotel, Los Angeles
April 12-14	**Ophthalmology.** University of Kansas Medical Center, Kansas City
April 13-14	**Twelfth Annual Venereal Disease Symposium (American Venereal Disease Association and the Public Health Service).** Hotel New Yorker, New York City
April 13-15	**American Association of Railway Surgeons.** Drake Hotel, Chicago
April 13-20	**American Academy of General Practice.** Miami Beach, Florida
April 16-19	**Arkansas Medical Society.** Hotel Marion and Robinson Auditorium, Little Rock
April 16-20	**American Society of Maxillofacial Surgeons.** Barbizon-Plaza, New York City
April 17-18	**Pediatrics.** University of Nebraska, Omaha
April 17-19	**Anesthesiology.** University of Kansas Medical Center, Kansas City
April 17-19	**Internal Medicine for Internists.** Center for Continuation Study, University of Minnesota, Minneapolis
April 17-20	**Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
April 17-21	**Gynecological Endocrinology.** New York University Medical Center, New York City
April 17-28	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
April 17-22	**Electrocardiography and Heart Disease.** Cook County Graduate School of Medicine, Chicago
April 17-22	**Surgery of the Hand.** Cook County Graduate School of Medicine, Chicago
April 17-28	**Urology.** Cook County Graduate School of Medicine, Chicago
April 18	**The Neurological Examination (Sixth in the series "General Medicine and Surgery").** The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas
April 18	**The Use of X-Ray in Evaluating the Emergency Pediatric Patient (Eighth in the series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri
April 19-22	**Fifth Postgraduate Course on Fractures and Other Trauma (Chicago Committee on Trauma of the American College of Surgeons).** John B. Murphy Memorial Auditorium, Chicago
April 20	**The Thyroid (Sixth in the series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City
April 20-21	**Cardiac Auscultation.** University of Kansas Medical Center, Kansas City
April 20-22	**Otolaryngology for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis
April 20-28	**Israel—Clinical Postgraduate Program (UCLA).** Jerusalem and Tel-Aviv
April 21-23	**American Society for the Study of Sterility.** The Americana, Bal Harbour, Miami Beach
April 21-28	**American College of Obstetricians and Gynecologists.** Americana Hotel, Miami Beach, Florida
April 22-25	**Texas Medical Association.** Galvez and Buccaneer Hotels, Galveston
April 23-27	**Society for American Bacteriologists.** Morrison Hotel, Chicago
April 23-28	**Course on Nursing Aspects of Health Mobilization (USPHS and Office of Civil Defense Mobilization).** OCDM Staff College, Battle Creek, Michigan
April 23-28	**Course on Environmental Health Aspects of Health Mobilization (USPHS and Office of Civil Defense Mobilization).** OCDM Staff College, Battle Creek, Michigan
April 24-26	**Aerospace Medical Association.** Chicago
April 24-26	**American Association for Thoracic Surgery.** Sheraton Hotel, Philadelphia
April 24-26	**International Academy of Pathology, Annual Meeting.** Chicago

(Continued on page 175)



Iowa Might Well Copy

Colorado's Plan for Administering Medical Aid for the Aged

In Colorado, a medical service plan for elderly people with little or no income has been administered throughout the past three years by Blue Cross and Blue Shield, under contract with the State Welfare Department. The arrangement—virtually identical with that which is being proposed by several of the groups that will furnish services under the MAA program in Iowa—meets with the enthusiastic approval of all the parties involved.

EVERYONE IS PLEASED WITH THE ADMINISTRATION

As a part of a study that a team of investigators made last year for the Health Information Foundation, an instrumentality of the commercial (non-Blue Cross-Blue Shield) health insurance companies,* about 100 participants in the Colorado program—physicians, hospital administrators, welfare officials, pensioners, and Blue Cross-Blue Shield executives—were interviewed individually. Every single one of them declared that the administrative arrangement has worked well.

"With Blue Cross administering the program," a county welfare director explained, *"we have no problems with hospitals—no difficulty about admissions and no time-consuming conferences about charges and the like."*

An orthopedic surgeon stated: *"Physicians' acceptance of this program was largely due to its use of Blue Shield. If the same program had been set up through a state bureau, we would have had a completely different reaction to it."*

A state welfare official declared: *"By using the existing channels—Blue Cross and Blue Shield—we avoided any conflict with physicians and hospitals and held down our paperwork too."*

A hospital administrator observed: *"Existing Blue Cross and Blue Shield controls have held abuses to a minimum in this program—far less than would be found in a government program."*

THE SCOPE OF THE PROGRAM

Before we present an outline of the administrative set up, a brief sketch of Colorado's payments and service benefits is in order. In September, 1937, every indigent beyond 60 years of age, in that state, began receiving a pension. The amount has been raised several times since then, and is now $107 per month, less other income. On January 20, 1957, the Colorado medical care plan for pensioners went into effect, and an amendment to the state constitution decreed that $10,000,000 per year—no more and no less—should be budgeted for its support. All pensioners are eligible for its benefits.

Originally, patients were allowed 30 days of hospitalization per admission, and readmission might succeed discharge without the patient's stepping outside the door and reentering it. Last fall, in what may have been only the first in a series of curtailments, the limit was reduced to 21 days per admission, and unless the attending physician requests an extension, a period of 30 days must elapse between discharge and readmission. Emergencies are given special consideration, thus preventing hardship, and it is thought that the change in rules is helping to stem overutilization.

Pensioners entering nursing homes agree to pay the proprietors $100 per month, retaining for themselves just enough money to pay for their clothing and incidentals. The state makes direct payments to the nursing homes in varying amounts, depending upon the facilities and services that the institution is able to provide, and upon the type of care that the particular patient must have. These

*Reich, William T., and Anderson, O. W.: COLORADO'S MEDICAL CARE PROGRAM FOR THE AGED. Health Information Perspectives No. a2. Health Information Foundation, 420 Lexington Avenue, New York City 17. 1960.

sums may not exceed $95, and at present average $67 per patient per month. From the pensioner's relatives, the proprietor may collect additional amounts, provided that the total from all sources does not exceed $250 per month for any particular patient.

Pensioners are provided surgery and inpatient medical care much as they would be if they held Blue Shield service contracts. Those in nursing homes are provided two doctor's calls per month, and as many as two more when they are acutely ill. Those who live at home are entitled to a non-cumulative two office or home calls per quarter at state expense. Consultants' and surgical assistants' fees are covered, as in Blue Shield contracts.

Prescription drugs, except cortisone and its compounds, are furnished to patients at state expense, but dietary supplements, household remedies and personal care items are not. In many instances, because Colorado has counties without hospitals and even without doctors, its elderly people must travel long distances to obtain health care. In such cases, the plan covers transportation.

THE FUND'S "DEFICIT" IS A BOOKKEEPING FICTION

The pensioners' medical care plan in Colorado is proving more costly than was anticipated, and as has already been mentioned, curtailments of benefits have been undertaken in an effort to curb overutilization. The annual budget for the fund was permanently set at $10,000,000 three years ago, and expenditures over that amount are technically "deficits" that federal grants under the provisions of the Kerr-Mills Act cannot formally erase. But when, by dipping into general funds, Colorado spends Kerr-Mills money for its eldercare program, during this and ensuing years, only the most rigid purist can say that it is spending improperly.

ADMINISTRATION HAS A MINIMUM OF COMPLICATIONS

Blue Cross and Blue Shield began administering the Colorado hospital-care and physician-service arrangements on February 1, 1958, less than a month after the inauguration of the medical care plan, and they have continued doing so ever since. Payments for nursing home care and for transportation of patients are made directly to the vendors by the Welfare Department. Drugs are purchased direct from retail pharmacies, and claims from druggists are audited by a committee of independent pharmacists.

A Medical Advisory Committee containing representatives of the state medical society, the osteopathic association, the pharmacal association, the hospital association, the dental association, the State Department of Health, the state association of county commissioners, the National Annuity League, the state Chamber of Commerce, the League of Women Voters and the county welfare directors' association was set up by the State Welfare Department to guide it in implementing and perfecting the program.

Blue Cross and Blue Shield were selected to administer the bulk of the old-age pensioners' medical care program partly because they already had the machines and personnel to do the job. They could carry out the details of the program for less money than the State Welfare Department could do the work in its own offices. And just as importantly, less paper work would devolve upon the suppliers of services.

Each of the eligibles receives a card resembling a Blue Cross-Blue Shield identification, and he presents it to his doctor when he seeks medical care outside the hospital, and presents it at the hospital when his doctor has requested his admission there. The hospital's paper work is limited to (1) confirming the patient's eligibility, since despite the card, the patient may no longer be entitled to service; (2) billing Blue Cross when the patient has been discharged; and (3) notifying the local welfare office by post card when the patient has left the institution. Normally, the physician whose patient has been hospitalized has only one form to complete—a standard statement for services rendered, which he sends to Blue Shield. If the patient needs an extension of his hospitalization, the doctor must fill in another form, which goes to the director of medical services at the State Welfare Department. The doctor must send individual billings to Blue Shield for his visits to nursing-home pensioners and for visits to or from pensioners who live at home.

Blue Cross and Blue Shield must keep their lists of eligibles current, and must see to it that the billings that are presented to them are for covered services and that their amounts conform with the fee schedules that have been negotiated between the suppliers and the Welfare Department. They pay the hospitals and doctors, and bill the Welfare Department, adding their administrative fees to the sums that they have paid out, and attaching an IBM card for each pensioner-patient and a list of all disbursements.

The State Welfare Department determines the financial eligibility of each elderly applicant, passes upon requests for extensions of hospitalization and for readmission within 30 days after discharge, provides the nursing-home, drug, and transportation parts of the program, and reimburses Blue Cross and Blue Shield.

CONCLUSION

The Colorado State Department of Welfare retains ultimate responsibility for its pensioners' medical care program, and its management contracts with Blue Cross and Blue Shield would not prevent it from imposing new controls, if such seemed desirable.

Since Blue Cross-Blue Shield administration has saved money, lessened paper work and promoted good relations between the Welfare Department and the suppliers of health services in Colorado, it is probable that a similar arrangement would work advantageously in Iowa.

Editorials

NEW EDITOR OF THE JOURNAL

In mid-February, Dr. Dennis H. Kelly, Sr., of Des Moines, became scientific editor of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, succeeding Dr. Everett M. George, who had recently moved to southern California.

From October, 1939, until December, 1945, Dr. Kelly was associate editor of the JOURNAL, a part of the time when his partner in practice, Dr. Lee Forrest Hill, had principal responsibility for the publication.

Dr. Kelly is a graduate of Grinnell College, he took his M.D. degree at Northwestern University, he interned at Cook County Hospital, Chicago, and he served his residency at Boston Children's Hospital. He is a member of Phi Beta Kappa and Alpha Omega Alpha, a member of the American Academy of Pediatrics, and a licentiate of the American Board of Pediatrics. He practiced his specialty in Des Moines from 1928 until 1955, when poor health necessitated his retirement.

IS THERE AN AUTHOR IN THE HOUSE?

There is a paucity of scientific papers on file in the office of the JOURNAL. The members of the Scientific Editorial Panel urge their colleagues to present scientific papers for publication.

Every doctor's office and every hospital, large or small, offers material for clinical investigation. A large teaching center is not a necessity for the satisfaction of scientific curiosity. Corrigan elucidated the clinical picture of aortic insufficiency in a five-bed hospital.

Great additions to the knowledge of the physical and emotional problems of our farm population can be made by the inquisitive doctor in a small community. Rare cases are not confined to the city hospital. The student health services at the State University of Iowa, Iowa State University and Iowa State Teachers College have an opportunity to acquaint us with the health problems of the college student, his tensions and conflicts, the rates of attrition in student bodies and their causes, and allied areas of interest. The industrial physicians at John Deere & Co., The Maytag Co., Collins Radio Co., the Rath and Morrell packing companies, and other comparable plants could offer splendid papers on such subjects as screening, absenteeism, sickness, accidents, etc. A medical report from an institution for the older age group, such as Friendship Haven, at Fort Dodge, could be most illuminating.

This JOURNAL is yours. Please help us make it useful and vital.

ARE YOU TELLING YOUR PATIENTS ENOUGH?

A recent issue of a British medical journal published a letter in which a physician was critical of his profession for the failure of the individual doctor to communicate adequately with his patient. Such neglect, wrote the doctor, alienated the patient, often led to serious misunderstanding and misinformation, and jeopardized the lay image of the physician.

The same criticism can be made of the medical practitioner in this country. In Britain, where socialized medicine exists, there may be some justification for the reluctance of the doctor to devote valuable time talking with his patient. In this land of free enterprise, however, reticence can be attributed only to thoughtlessness, indifference or the compulsion of time.

The bizarre descriptions of disease processes which reach our ears from the layman, and the complaints one hears of haste, of lack of interest and of inattention, attest to the validity of lay criticism of many physicians. How often has one heard the hospital patient complain that the doctor was in and out of the room so rapidly that there was no opportunity for the patient to ask him a simple question.

From the layman's point of view, the *art* of medicine is perhaps more important than the *science* of medicine. The manner and mien which inspire confidence, the unhurried consultation even though the waiting room is filled with patients, the little diagram to clarify a condition, the time devoted to a lucid explanation, a manifestation of sympathetic and kind understanding, a regimen outlined in writing rather than vaguely expressed orally—all these are parts of the art of the practice of medicine.

It is distressing to hear some friend or neighbor say "I am taking a heart pill, a water pill, and a blood pill," with no understanding of his auricular fibrillation and congestive heart failure or his hypochromic anemia. A well informed patient should be a better patient, and the time and effort devoted to the elucidation of his condition will be gratifying to both patient and physician.

The individual patient regards himself as the most important one in the physician's practice, and he feels that he is entitled to the doctor's undivided attention, interest and concern. The short

time that the doctor spends answering questions and properly informing the patient will be mutually rewarding, and will create a finer patient-doctor relationship.

MEDICAL GENETICS

In the short interval which has elapsed since the review of new discoveries in medical genetics in this JOURNAL just one year ago,[1] enormous advances have been made in this field, some of them answering old questions, but most of them opening up new areas for thought and investigation. It is easy to become enthusiastic about newly-described minute alterations of cellular, nuclear, chromosomal, genetic or even molecular patterns; however, as physicians we should not lose sight of the fact that our primary responsibility is still to the patient, and we must be principally concerned about how we can best apply the new discoveries to the care and management of patients with multiple congenital anomalies, leukemias, inter-sexual states, mongolism and phenylketonuria, to mention but a few conditions.

Most chromosome laboratories now use a modified leukocyte tissue-culture method as a screening test.[2] If this reveals any anomalies, the more tedious skin tissue-culture method is used.[3] The latter procedure gives better preparations, and has the advantage that the cells may be re-transplanted, perpetuating cultures indefinitely for use in studying *in vitro* biochemical and metabolic changes associated with the chromosomal anomaly. All methods are variations of the same principles: mitosis is interrupted with colchicine, which causes breakdown of the mitotic spindle in metaphase; hypotonic solutions disperse the chromosomes as the cells swell, and final squashing between slide and coverslip promotes further spreading so as to obtain as little overlap of the chromosomes as possible. These preparations show the two chromatids of the reduplicated metaphase chromosomes held together either at the end (acrocentric) or the middle (mediocentric), or off-centered (sub-mediocentric). A group of geneticists meeting in Denver last year classified human chromosomes according to size and differing arm lengths.[4] Their conclusions are generally acceptable, but we lament their handling of the X chromosome, which as yet cannot be distinguished morphologically from a large group of intermediate-sized medio- or submediocentric chromosomes.[5] We should therefore like to urge caution in the reading of reports dealing with anomalies of the sex chromosomes, unless there are also aberrations of the sex chromatin and gonadal differentiation.

Speaking of *sex chromatin,* we should like to point out several fallacies commonly perpetrated in the use of this term. On the basis of the sex chromatin test, persons should be classified only as positive or negative, since this procedure is not an infallible test of the presence of a male or female genetic constitution. In the first place, normal males (sex chromatin negative) may show the sex chromatin body in 6 per cent of their cells, and females (sex chromatin positive) need show it in only 50-90 per cent of their cells. Thus, to speak of the sex chromatin positive Klinefelter syndrome as genetically female or as an example of extreme sex-reversal is unrewarding. Their most common chromosomal constitution (XXY) permits us to conclude with equal facility that this could be a female with an extra Y, or a male with an extra X chromosome. The same applies to the most commonly encountered type of the sex chromatin negative Turner syndrome with XO constitution. These patients have been labeled sex-reversed males, but could represent males with a missing Y, or females with an absent X. Actually, these two types are neither male nor female, but new constitutional types of intermediate or mixed genetic sexuality. Their phenotypic sexuality depends first on the fact that the presence of the Y chromosome usually leads to male differentiation,[6] albeit imperfect, regardless of the number of accompanying X chromosomes.

Second, the neutral sexual state due to fetal castration or failure to form gonads, as seen in the Turner syndrome, is the female state, again quite imperfect on close inspection. In addition, many exceptions to these two chromosomal types are known. Many mosaics (individuals who show a certain constitution, say XO, in one half of their cells, and another, XY for example, in the remaining half) have been described. Neither is the XO state incompatible with normal female function. One XO woman is reported to have had four children. It is also possible to have many sex chromosomes (XXX "females," XXXY and XXXXY Klinefelter, and the fantastic case of Prader with an O/Y/YY/YYY/XX/XXX/XXXX/XXXXX constitution). These individuals, with the exception of an occasional XXX "female," are sterile and usually bear many of the stigmata of constitutional unfitness. They may be detected by the presence of several sex chromatin bodies in the cells of their buccal smears.

Thus, it is impossible to determine a person's genetic sex from the buccal smear alone. Apparent normality does not exclude sex-chromosomal anomalies. The only conclusion we may safely draw at this time is that the Y chromosome usually induces male differentiation, and that there is usually one more X chromosome than there are sex chromatin bodies in the buccal smear.

A perusal of the literature concerning autosomal anomalies gives a strikingly different picture. For one thing, total absence of an entire autosome (monosomy), which should theoretically occur with the same frequency as the presence of a supernumerary (trisomy), has never been observed, and thus we are led to conclude that

monosomy is usually lethal. The presence of one or more extra autosomes is almost always associated with multiple congenital defects leading either to death in early life or to a severely handicapped individual. Besides mongolism, there are now two well-described entities of multiple congenital anomalies associated with trisomy of a *D* or an *E* chromosome. These anomalies include: cleft lip and palate, anophthalmia and microphthalmia, congential heart disease, hernias, deformed ears, congenital cerebral defects, and severe psychomotor and growth retardation. Since all of these malformations are relatively often observed, alone or in combination, we would suspect that a far greater number of multiple congenital anomalies are caused by chromosomal aberrations than has previously been supposed.

It is now known that mongolism is most commonly caused by trisomy of one of the smallest acrocentric chromosomes (G); however, several other subtle variations of this chromosomal anomaly have been observed, especially in familial mongolism or mongols of young mothers. If the assumption of Stern that man has approximately 10,000 genes is correct,[7] then it becomes interesting to speculate how this tiny extra chromosome can cause so much mischief. According to this estimate, we calculated that the *G* chromosome contains only 145 genes, and on a first try it is fairly easy to tabulate well over 100 commonly-observed anomalies in mongols. It would be foolish to equate gene with congenital anomaly. It is astonishing, nevertheless, that 145 extra genes can have such a profound effect on an individual.

This observation provokes thought on several points. For one thing, even the tiniest autosome is vitally important to the individual constitution. It supports the theory that loss of an autosome is probably lethal. It is also reasonable to assume that if a small supernumerary chromosome may cause mongolism, then trisomy of a larger chromosome should cause far more serious difficulties. On the other hand, the absence or presence of X or Y chromosomes with a calculated number of 700 and 140 genes, respectively, does not seem to be such a serious error, strengthening the theory that chromosomal sex determination is a phylogenetically-recent, secondarily-acquired mechanism. We would also suspect that these two chromosomes may even be partially void.

It is in the field of biochemical genetics that the greatest promise of progress lies. At the present time, it is the continuing task of the biochemical geneticists to define further molecular pathology involved in hereditary diseases, and to refine the methods of detection of carrier states of recessive illnesses. This will be the area of medicine where all disease etiology, hereditary or otherwise, and all treatment will eventually come together, creating a tremendous chasm between the uneducated, frightened patient inquiring about the heredity of galactosemia and the ultimate molecular aberration which is the cause of the defect. Thus a great responsibility falls upon the physician to bridge this gap in his dealings with the patient. It is almost impossible for the busy practicing physician to keep informed about the progress in genetics today. We suspect that clinical genetics will soon be a respectable specialty of medicine, and that many such problems may be solved by referrals from physicians to the medical geneticist.

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A CAMPAIGN OF ACCIDENT PREVENTION

With the advent of warm and sunny days there will be a tragic repetition of the annual epidemic of accidents on our farms, in our towns and cities, and on our highways.

The farmer will be preparing the fields with tractor and plow, with disc and harrow. The home owner will be raking and burning. Our children will be jumping rope, chasing balls into the street, playing games on the curb, thoughtless of the possibilities of accident. Parents will take their family to visit the grandparents or just take a pleasure ride in the country. The young man will be courting his girl as they drive to a dance. The lakes and streams will beckon.

The incidence of accidents could be tremendously reduced by a state wide campaign of accident prevention. If every physician would conscientiously preach prevention in his office and before parent-teacher meetings, farm groups, luncheon clubs, student assemblies, etc., a consciousness of accident prevention could be created.

Every paper in each community in the state, each periodical, each company paper, each letter, could emblazon the thought "PREVENT ACCIDENTS." If accident prevention could be given the same advertising in the press, on the radio and on the television screen as is devoted to cigarettes and cosmetics, an effective reduction of accidents would be assured.

It is time for a "call to arms" by all groups interested in the welfare of the citizens of the state. The physician in each community can play a lead-

ing and decisive role in an effective campaign to reduce the incidence of accidents in his immediate area.

MEDICAL LEADERSHIP IN REHABILITATION

Whether simple or complex, rehabilitation begins with medical care. Certainly, the physician is not the sole determiner of the full potentialities of the patient, and he must rely upon the social workers, the therapists and the vocational rehabilitation counselors for their professional contributions. The physician is responsible for determining the level of mental and physical improvement the patient is likely to reach, the intensity of medical and other services the patient is capable of accepting, and the time such services should begin. Likewise, it is his responsibility to the patient, throughout the entire rehabilitation procedure, to be certain that the latter's health status is maintained at an optimal level.

These medical functions are shared by all physicians, regardless of specialty, who care for patients with any disease or disorder which may leave a residual disability. Responsibility cannot be left for the very small number of physicians who have chosen physical medicine and rehabilitation as a specialty and have received board certification as a mark of their exceptional professional competence in this field. To this group must be assigned the responsibilities for the management of very difficult cases, for the organization of special rehabilitation services, and for providing consultation to other physicians as necessary.

Unfortunately, there are many physicians who have not taken an interest in or accepted responsibility in regard to the rehabilitation aspects of their patients' medical problems. As a result, complaints of the following types are often made by nonmedical agencies administering rehabilitation programs such as vocational rehabilitation, sheltered workshops, or welfare medical care (Aid-to-the-Disabled):

1. Physicians frequently fail, either deliberately or by just not getting around to doing it, to provide the necessary medical information to assist the agency in determining the eligibility of the patient for the rehabilitation program.

2. Physicians often write down "totally disabled" without reporting any clinical findings to back up such an evaluation.

3. When adequate clinical reports are submitted, physicians too often state that no rehabilitation services are indicated, when it is known by both medical and nonmedical members of rehabilitation teams that patients with similar types of handicap often show good responses to rehabilitation.

4. It is recognized that rehabilitation services are not adequate in many areas of the state. Yet several of the existing high-quality facilities are having administrative and financial difficulties because they are not receiving sufficient referrals from the physicians in the community. On the basis of numerous studies of the prevalence of disabilities in a community, it appears that there are many patients just not being referred for available services.

5. When patients are referred, the physician's request is often made for a single service, such as physical therapy or occupational therapy, when it is obvious to those experienced in rehabilitation that the person requires a comprehensive evaluation. Such persons often have problems in adjusting to their disabilities, which may be interpersonal or may relate to their dealings with their family or their community. On the other hand, it may be necessary for them to have a complete change in work habits or be trained for a new vocational field because the disability prevents them from returning to their former area of occupation. Thus, rather than a few physical therapy treatments a week, they should have a social evaluation and a prevocational counseling and testing service, to be followed by actual vocational training if indicated. All of these services should be begun at the earliest possible time.

6. Physicians rarely consider the current labor market or the types of jobs available in the community when recommending handicapped patients for certain jobs. The most common complaint by employment specialists is that the patient is declared suitable for "light work," without the doctor's having any idea of what "light work" involves. The classic example is the referral of such a patient for a position as night watchman, when it is well known that the watchman must make rounds through a multistoried building every hour and be ready to take quick action in case of fire or intruders.

Related to this lack of medical leadership is the frequent tendency of many nonmedical agencies to take for granted that they are the leaders in the rehabilitation field and that physicians play a very secondary role, being simply a source from which medical services may be purchased. This seemed to reach a peak in the proposal for federally subsidized "Independent Living Rehabilitation" (primarily a medical rehabilitation program for handicapped persons with no potentialities for return to employment) under the supervision of the vocational rehabilitation units of the states. In a widely distributed "background statement," the National Rehabilitation Association declared that only vocational rehabilitation counselors have the philosophy and the experience to undertake such a program. While holding that rehabilitation for independent living is not primarily medical, the statement emphasized that the vocational counselors have had lots of experience in running medical programs, and are perfectly capable of doing so.

Thus we see here the pattern which is charac-

teristic of phenomena in other areas of medical care. Whenever physicians fail to exert the necessary leadership in medical problems, there will be lay groups ready to step in and do it for them. It is still our philosophy that physicians should have the key role of responsibility for problems which are primarily medical.

Thus we must face the question of "who leads in rehabilitation." Medicine is not the only discipline concerned with the rehabilitation of disabled persons, whether the objective be employment or a maximum degree of independent living. However, the physician is a very important member of that team, and if he is not the captain, he would at least appear to be the quarterback. It is up to him to determine the medical potentialities of a patient and what the patient's mental and physical status will accept.

If the physician fails to carry out this role, there is the immediate danger of unfairness to the patient, who may thus fail to achieve his potentialities. There is also the long-range danger of handing over medical problems to nonmedical groups on a silver platter.

—From an editorial in the NEW YORK STATE JOURNAL OF MEDICINE, Apr. 15, 1960, pp. 1218-1219.

Letter to the Editor

MEDICAL CARE OF THE AGED

Sir:

It is difficult to adjust to things as they are, rather than as we wish they were. But the adjustment will be made in one way or another.

As our political leaders challenge the people to conquer the problems of the sixties, it is important that the medical profession accept the challenge and enter the future. And if boldness is necessary, and a certain recklessness, then that will be. But though prudence becomes a victim of change, the independence of medical practice must somehow be maintained.

The doctors as a group have been criticized for many years because of an alleged opposition to so-called progressive or forward-looking measures. It has been said that they resisted public health activities, health insurance, social security, the concept of the welfare state. For better or worse, the accusations are probably in large measure correct. But who can say, without the vision of a future historical hind-sight, that resistance to these very measures was not in truth a defense of basic liberties. For as regimentation and government succeed in this country in easing our individual burdens, we are prone to forget that our burdens made us great and freedom dear.

However, it is of little advantage now to occupy ourselves unduly with the past or what might have been. Our present concern, or so it seems, is how we answer the challenge of the future. At the moment, it looks as if our answer is too much an argument over whether a fee schedule unit will be one, three, or five dollars. It would be silly to infer, as matters stand, that the argument should not take place at all, for only the very clever could make a living by giving two dollar shots for one dollar. But the dollars should remain in perspective, a necessary although secondary consideration. It is depressing to be defended publicly by cost accounting statistics. It is depressing that we feel this necessary. Such figures and statistics will protect our incomes, but if that is to be our issue, then we will doubtless win the price but lose our professional freedom. If I understand properly the course of events leading to socialization of medicine in England, the spirit and will of the doctors to resist was broken not so much by the inducement of larger fees (although that was offered) but by the reduction of a basic disagreement in philosophy to an argument over money. And that is where we stand today with our cost accounting, our fee schedules, and our increasing mood of resignation.

The great challenge to our profession at the present time is the care of the aged, and this challenge should be answered with ideas. Several years ago, when government threatened the independence of medical practice, a great and effective idea was advanced in the form of Blue Shield. Now this same idea has been retouched and is back on the stage—a "benign" old charmer whose mitotic figures are beginning to show. But times and circumstances have changed. What was effective then is clearly inadequate now, and serves only to weaken and erode from within. To compound our problems, after much well-intentioned lobbying and letter-writing, we compromise on legislative action and hail it a victory. The compromise is a bill which perhaps satisfies least of all the individual doctors themselves while creating an endless investigation of who are needy and an endless dispute over who shall be paid what.

In preparing to answer the challenge of the times, we could well re-examine our support of the "free choice of physician" concept. This principle has been considered basic to the practice of medicine in this country. We have insisted that free choice of physician be preserved regardless of the type of social legislation undertaken for the care of the aged. The free choice of physician may or may not be a boon to the doctors, but its purpose is not for the advantage of the doctors, but rather for the protection of the patients. It

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

is hardly possible that in the long run this right of the patient can be preserved under any form of continuing government medicine. The two are essentially incompatible. Neither in the armed services, the Veterans Administration, government tuberculosis or mental institutions, nor in the Public Health services—in none of these does the patient's choice of physician obtain as a general principle. It is proper that the medical profession should specifically recognize this. It is not unreasonable that the medical profession, as a matter of common sense, should advocate rather than protest the loss of free choice of physician under any plan of government supported medicine. A private physician goes only with a private system.

It seems to me that this could be our answer to the challenge confronting us: that we acknowledge the course of events and the attitudes of the people, that we recognize the responsibility of society to its older generation, that we endorse unrestricted "free" government medical care for the aged. But the heart of the bargain would be government medicine—government physicians, government hospitals, government nursing homes —without involvement of the private practice of medicine. Would it be illogical for the government to employ full-time physicians to care for the aged who wish "free" medical care? Would it be illogical for the government to build hospitals devoted entirely to the care of the aged who request such "free" hospitalization? Is this less logical than the Veterans Administration medical program? Would the cost be more frightening, or more staggering, than that now contemplated or already spent on other massive government enterprises? Would it be less logical for the medical profession to propose this than it is for a chamber of commerce to endorse public housing? I think not. Perhaps under such a system we could yet salvage a large segment of our profession to remain free of government domination.

The fundamental idea of such a form of government medicine could hardly be called revolutionary. It is essentially a part of the traditional acceptance by society of responsibility for the care of its non-productive members. In our fear of socialized medicine, it is ironical that notice is not taken of the fact that the private practice of medicine can live side by side with government medicine, and can even compete favorably with it. What the private practice system cannot do is survive as a part of government medicine.

The question could be fairly asked whether it was worthwhile, or served any useful purpose, to suggest a new route when we are already so far along on the old. I believe it is worthwhile, for to believe otherwise would be a concession to the oppressive doctrine of inevitability and futility.

DANIEL F. CROWLEY, JR., M.D.

Des Moines
February 10, 1961

KENNEDY'S HEALTH CARE FOR THE AGED

When a man comes promising to do good for little children and to ease the sorrows of age, anyone who questions him is bound to sound a little like a skinflint who would take candy from babies and push his grandmother out in the cold.

If you think not so, watch what is going to happen to those in Congress bold enough to raise questions about President Kennedy's proposals to meet the "urgent needs" of the nation's children and the "haunting fears" of old age that beset the rest of us. Against the emotional wind blown by such imagery, reason is a feeble reed.

Yet somebody had better ask the questions. It is not merely that hidden beneath the tinsel there are a good many prickly nettles; the promise itself is not at all what it seems. For that promise is not simply that society will try to improve its way of taking care of its indigent and helpless, with which aim no man would quarrel; but rather that by this program the government is going to improve the medical care of all the people. That promise, it seems to us, is pure deceit.

It is going to take some very probing questions even to uncover the tangible nettles tucked away in this program. Off-hand, we can recall no program of such magnitude ever being submitted to Congress without a single line in the President's message as to what its cost will be, now or ultimately.

There are, to be sure, some figures given on what the government says it is going to tax the people initially, but even they are not exactly what they seem.

The President speaks of raising Social Security taxes by only one-quarter of one per cent and of lifting the base of this tax to the first $5,000 of income, a seemingly trivial price to pay for such wonderful benefits. But this quarter of one per cent is pyramided; under present law, Social Security taxes are already scheduled to go to 3½ per cent for every wage earner in 1963; to 4 per cent in 1966; to 4½ per cent in 1969. This new proposal is in addition thereto.

And of course in addition to this, there will be an equal amount levied, so the law phrases it, upon the employer, the implication here being that since the employer pays it, it's a gift to the wage earner. But slice this as you will, it means that upon the paycheck of every man affected there will be a payroll tax of more than 9 per cent—this 9 per cent, mind you, over and above all income taxes, where the lowest rate already is 20 per cent.

But if this in itself is no trivial sum, it still offers only a glimpse at the actual cost of this program. It was not without reason that this question was lightly passed over in the President's message. Nobody knows. And the way this program is proposed, nobody can possibly know—

neither the President, nor Congress, nor you who are going to pay for it.

Consider: The proposal is that after an initial deduction, which must not be less than $20, the government will pay "all costs" for up to 90 days in the hospital "for a single spell of illness" or "all costs" of nursing home facilities for an additional 180 days. "All costs" in excess of $20 for outpatient diagnostic services. With such an unlimited commitment it is no wonder that government statisticians haven't yet come up with a cost figure.

Not even the Administration pretends the cost will be covered by the $1.5 billion which is supposed to be raised by the "extra" Social Security tax. And whatever that mysterious figure is now, it, too, is only a beginning. Already the age of the proposed beneficiaries has dropped from 68 to 65 in a bare six months; the period of benefits has been extended from earlier proposals; and some new benefits have been added. What would happen to the program, once started, is incalculable.

But if you want to get some idea of the upper reaches of this commitment which the government would now undertake, you can do a little arithmetic with the President's own figures. He says there are 16,000,000 people over 65. Half of them have medical costs of $700 or more a year. There is a liability here of over $5 billion, just counting the half with major medical problems.

But enough of these nettles. There is no use in even trying to grapple with the limitless cost increases that lie in future changes in the law, or what this wholesale "send-the-bill-to-the-government" program will do to future costs. No one can guess at the effect on hospitals from overcrowding when the government pays most of the bill.

For the costs are not the only things that tarnish the bright promises, although these are staggering sums for the whole country to pay in order to take care of the few truly needy.

The President assures one and all that this "very modest proposal" is not "socialized medicine." It is not being paid for by the general taxpayer, he says; only by employers and employes, as if the taxpayers were somebody else. And it is not, so we are told, going to touch the private medical system of the country.

Yet here is a measure for the government to take over the responsibility of medical care for all of us in age, indigent and self-reliant alike. We would have no choice in the matter. So doing, government takes on the responsibility to see that the money is spent as public funds; it cannot in duty pay out public funds to just any doctor or to just any hospital. Nor will it; the medical facilities for which government pays government funds must meet government standards, and those standards may be medical, financial, social or whatever the government would make them.

To pretend that this will not alter, in a deep and fundamental way, the health and medical system of the country is specious. We have no doubt that the few really needy will get better medical care than before. But the price of providing for the needy in this way is not to be measured only in billions of dollars, however many of them there may be, but in what the great apparatus of government will do to the medical care of all the rest of the people in a country which has achieved—without government—the highest medical standards of any country in the world.

If this is not socialized medicine, it is nothing. And the President himself promises that this modest program for old people is not an end but a beginning—a "foundation on which to build."

Somebody had better ask questions about what it is that is being built.

—Editorial, THE WALL STREET JOURNAL, February 13, 1961, p. 8.

USPHS BUDGET PASSES $1 BILLION MARK

The final Eisenhower budget, which President Kennedy seems certain not to reduce, recommended record appropriations for health, medical and biomedical-research functions. The funds for the U. S. Public Health Service passed $1 billion for the first time, and those moneys of course will not include those required for the support of the biological and medical activities of the Atomic Energy Commission, the National Aeronautics & Space Administration, the Veterans Administration, the Army, the Navy, the Air Force and the Federal Aviation Agency. Substantially increased appropriations were asked for all of them.

More than half of the USPHS budget of $1,030,987,000, or $540 million, is to go to the National Institutes of Health. The NIH research grants in aid during 1961-1962, if Congress consents, will amount to twice as much as it cost to operate all divisions and activities of USPHS in 1954.

These figures were reported in the January 23 issue of Gerald Gross's WASHINGTON REPORT ON THE MEDICAL SCIENCES. In commenting on the appropriations recommended for the Veterans Administration, Mr. Gross said that $66 million is to pay for a new 1,000-bed hospital in Brecksville, Ohio. Total anticipated patient load in VA hospitals and domiciliaries will average 141,500 daily, and funds are allowed for 3,622,000 outpatient medical visits and 55,000 outpatient dental examinations and treatments.

In 1959-1960, according to Mr. Gross, the U. S. Army paid $15.4 million for the care of dependents in civilian hospitals. The cost rose to $15.7 million this year, and $18.1 million is allocated for the fiscal year beginning July 1, 1961. The U. S. Navy's Medicare program cost $21.5 million in 1959; cost $21.4 million this year; and is allowed $22.4 million in the budget for next year.

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

THE CHOICE OF A MEDICAL CAREER, ESSAYS ON THE FIELDS OF MEDICINE, ed. by *Joseph Garland,* M.D., and *Joseph Stokes, III,* M.D. (Philadelphia, J. B. Lippincott Company, 1961. $5.00).

BELOVED PROFESSOR, THE LIFE AND TIMES OF WILLIAM DODGE FROST, by *Russell E. Frost.* (New York City, The Vantage Press, 1961. $3.75).

CLEFT LIP AND PALATE REHABILITATION, by *William H. Olin,* D.D.S., M S., with a chapter by *Duane C. Spriestersbach,* Ph.D. (Springfield, Illinois, Charles C Thomas, 1960. $9.00).

AIDS TO MEDICINE, SEVENTH EDITION, by *J. H. Bruce,* M.D., M.R.C.P. (Baltimore, The Williams & Wilkins Company, 1961. $3.50).

YEAR BOOK OF DRUG THERAPY (1960-1961 YEAR BOOK SERIES), ed. by *Harry Beckman,* M.D. (Chicago, The Year Book Publishers, Inc., 1961. $8.50).

STROKE, by *Douglas Ritchie.* (New York City, Doubleday & Co., 1960. $3.50).

SURGICAL UROLOGY, SECOND EDITION, by *R. H. Flocks,* M.D., and *David Culp,* M.D. (Chicago, The Year Book Publishers, Inc., 1961. $10.50).

PHARMACOLOGY: THE NATURE, ACTION AND USE OF DRUGS, by *Harry Beckman,* M.D. (Philadelphia, W. B. Saunders Company, 1961. $15.50).

BOOK REVIEWS

SOURCE BOOK OF MEDICAL HISTORY, compiled, with notes, by *Logan Clendenning,* M.D. (New York, Dover Publications, Inc., 1960. $2.75).

The Dover Publications are reprints of original, significant works of science first published in years past. They include all types of works in the physical and biological sciences. The reprints are paperbacked volumes, so as to be inexpensive and within the reach of everyone's pocketbook. The present book, for example, costs only $2.75. It was written in 1942, and has now been republished in its entirety.

Logan Clendenning got a good deal of inspiration from Ralph Major, another Missourian, who had previously written CLASSIC DESCRIPTIONS OF DISEASE (1932). The arrangement of Clendenning's book is chronological, beginning with the Egyptians and ending with Roentgen. Short descriptive paragraphs regarding the characteristics of each period and its problems introduce many of the abstracts of the original articles. The original articles are in excerpt form, with famous passages included. Just enough of the original is included so as to afford the reader an insight into the problem and a grasp of the author's method of attack.

Each book on the history of medicine has inherent advantages and disadvantages. The advantages of this book are that it includes so many of the famous advances in medicine as presented in the actual words of their originators (or in translations of those words). Since the arrangement is rather chronological, we get, by reading the book, a review of the scope of medical history. Would that we all could understand more of the problems of the great masters who have preceded us. How much more tolerant we would then be!

The disadvantages of the book is that some of the abstracts are much too short. Perhaps they were abbreviated so as to whet our appetites for close readings of the entire works from which they were taken. All doctors should at least be familiar with these great men's names and the more important ones of their ideas.

This classic can be read in short bursts before one goes to bed or while one is waiting for his wife. But at least it should be read.—*D. A. Glomset,* M.D.

CLINICAL PATHOLOGICAL CONFERENCES OF THE MASSACHUSETTS GENERAL HOSPITAL, selected medical cases, ed. by *Benjamin Castleman,* M.D., and *H. Robert Dudley, Jr.,* M.D. (Boston, Little, Brown and Company, 1960. $12.50).

Having been an avid student of the case records of the Massachusetts General Hospital for many years, and an amateur sleuth attempting, time after time, to outguess the clinicians before the pathologist had his say, I welcome the opportunity of reviewing this collection of fine medical cases.

The book consists of case reports of 50 medical problems which have been discussed at the Clinical Pathological Conferences of the Massachusetts General Hospital over a period of many years. The cases are cross-indexed in such a manner that they can be read from the standpoint of the clinical features of each case, or from that of the final anatomical diagnosis of each case, or if one chooses to make a study of the technic employed in differential diagnosis by one particular discussant, the index enables him to find the conferences in which that man figured prominently.

The list of discussants represents a cross section of medical fields, and their scholarly discussions speak for themselves. The medical features of the cases cover a broad range, touching on all the organ systems of the body and varying from the very first case, which involves abnormal calcium metabolism, to the last case, which deals with multiple myeloma. The anatomical diagnoses also cover many varied diseases. Some examples of the diseases discussed are Addison's disease, carcinoid disease, Cushing's disease, endocarditis, Hamman Rich syndrome, primary amyloidosis of the heart, hemochromatosis, hemolytic anemia, lupus erythem-

atosus, thyroiditis, Wernicke's syndrome and Whipple's disease.

This book is excellently arranged, and any practitioner who has enjoyed reading the clinical pathological conferences published in the NEW ENGLAND JOURNAL OF MEDICINE will appreciate this fine collection of cases. For those individuals who are called upon to discuss cases at grand rounds, clinical pathological conferences, morgue conferences, etc., this book will be a set of models to be followed in whittling a list of possibilities down to the final diagnosis.

The volume would be a fine addition to any medical library. The case records have been enthusiastically received by the readers of the NEW ENGLAND JOURNAL for many years, and I feel sure that everyone will welcome this book just as warmly.—*Edward J. Hertko,* M.D.

KYBERNETICS OF NATURAL SYSTEMS, by *D. & K. Stanley-Jones.* (New York City, Pergamon Press, Inc., 1960. $6.50).

In 1954, at the New Orleans meeting of the Congress of Neurologic Surgeons, our honored guest Sir Geoffrey Jefferson commented in one of his addresses as follows: "If the afferent systems of the brain give us the most important clues to the plans of nervous activity as a whole, did we do right to concentrate on the cortex as we have done the last 50 years or more?"

THE KYBERNETICS OF NATURAL SYSTEMS emphasizes nonlinear processes of feed-back, with special attention paid to the afferent neural systems—the methods of turning impulses into actions.

In the chapter on control of involuntary muscles, the author points out that negative feed-back (or refection) characterizes the parasympathetic autonomic nervous system, and that positive feed-back is typical of sympathetic autonomic nervous activity. Negative feed-back is stabilizing (like the proper action of the thermostat in an electric iron) but may allow oscillation within limits. Positive feed-back (such as would result from reversing the wiring of the thermostat in an electric iron) results in a runaway, either to maximum or to zero. Such uncomplicated analysis is the essence of this volume.

The "currency" of nervous energy is the undifferentiated impulse traveling along the nerve—the "quantum of neural energy." This nerve impulse follows the all-or-none law of physiology, and undergoes frequency modulation. In vertebrates, a continuous stream of neural impulses arises from what Dr. Stanley-Jones calls "anti-gravity," and employs positive refection to maintain the posture of the body. It is the muscle-spindle receptor which is the end organ within the muscle, responding to the stretch of the muscle—"the little machine within the big machine." This is the negative monitoring refection which lies inbuilt in the fabric of the muscle.

There is a fascinating description of the evolutionary pattern of the lateral line in vertebrates. It is pointed out that this is not part of the dorsal neural canal infolding, and that the lateral line system of nerves remains distinct from the remainder of the nervous system. The lateral line system is a receptor or analyzer of low-frequency water vibrations in the aquatic species, but in addition performs perhaps a more important function of automatic maintenance of swimming due to the movement of the fluid and calculi in the lateral-line tubes. It is in this way that the lateral line system of lower vertebrates is analagous to the labyrinthine system of man, with its semicircular canals and otoliths. And the cerebellum is designated as the head ganglion of the lateral nervous system. The kybernetic pattern employed is that of negative refection in the case of the fish, but is that of positive feed-back (monitored by a negative) in the case of erect man.

Kybernetics, then, is a science of patterns of control in living or non-living systems. The two fundamental concepts are of negative and positive feed-back (refection). Cybernetics, as previously described by Wiener, pertained especially to the science of control of machines, and employed facts of communication engineering and mathematical demonstrations of circuitry. The difference between these two sciences, if it is more than a difference in spelling, is a subtle one, but significant at least to Dr. Stanley-Jones.

This is heady stuff, whether you call it Cybernetics or Kybernetics. As judged by an ordinary medico, this work on kybernetics is more easily assimilated than were Wiener's writings on cybernetics. The framework of reference is more strictly biological in Dr. Stanley-Jones' volume, and for this reason is no doubt more readily comprehensible to a non-mathematical physician. You will find much to titillate your curiosity here.—*John T. Bakody,* M.D.

Coming Meetings

(Continued from page 166)

April 24-28	**Ophthalmoscopy.** New York University Medical Center, New York City
April 24-28	**Histopathology in Ophthalmology.** New York University Medical Center, New York City
April 26-28	**American Association of Pathologists and Bacteriologists.** Chicago
April 26-28	**Medical and Chirurgical Faculty of the State of Maryland.** The Alcazar, Baltimore
April 26-29	**American College Health Association.** Detroit
April 27-28	**Southwestern Conference on Diseases in Nature Transmissible to Man.** Memorial Student Center, Agricultural and Mechanical College of Texas, College Station, Texas
April 27-29	**American Academy of Neurology** (members and guests). Sheraton-Cadillac Hotel, Detroit
April 28-29	**Institute on Alcohol Intoxication.** Law-Medicine Center of Western Reserve University, Cleveland
April 29-30	**American Psychosomatic Society, Inc.** Chalfonte-Haddon Hall, Atlantic City
April 29-30	**Cardiac Resuscitation (California Medical Association in Cooperation With USC School of Medicine).** USC Research Building, Los Angeles
April 29-30	**Office Gynecology (California Medical Association in cooperation With USC School of Medicine).** Los Angeles County Hospital, Los Angeles
April 29-30	**Use and Limitations of Laboratory Tests (California Medical Association in Cooperation With USC School of Medicine).** Los Angeles County Hospital, Los Angeles
April 30	**American Federation for Clinical Research.** Haddon Hall, Atlantic City
April 30-May 2	**Clinical Neurology (California Medical Association in Cooperation With the College of Medical Evangelists).** White Memorial Hospital, Los Angeles
April 30-May 3	**California Medical Association.** Ambassador Hotel, Los Angeles
April 30-May 4	**Pacific Coast Oto-Ophthalmological Society Annual Meeting.** Riviera Hotel, Palm Springs

Iowa Chapter of the American Academy of General Practice

THIRTEENTH ANNUAL SCIENTIFIC ASSEMBLY OF THE AAGP

There are many opportunities in 1961 for the Iowa Academy member to attend lectures and meetings to fulfill his study-hour requirements. If he missed the chance at Iowa City in February, he can plan to attend the AAGP General Assembly in Miami during April.

As usual, an invigorating schedule of meetings has been planned, starting with a panel discussion on Monday, April 17, of "The Socioeconomic Aspects of Medical Practice Today and Tomorrow." The five participants are Mr. Roger Fleming, of the American Farm Bureau; Dr. E. Vincent Askey, president of the AMA; Mr. Walter Reuther, of the United Automobile Workers and the AFL-CIO; Mr. Howard Hassard, of the California Blue Shield Plan; and Mr. Conrad Cooper, of the United States Steel Corporation.

The other three days of the meeting, the Scientific Assembly, will contain sound, practical, professional teaching, as follows:

Tuesday, April 18

"The So-Called Simple Hernia"—J. A. Glassman, M.D., Miami Beach

"Delayed Sequelae of Upper-GI Surgery"—Alton Ochsner, M.D., Tulane

"Trauma of Extremities"—Lenox D. Baker, M.D., Duke University, and Arnold Griswold, M.D., Louisville

"What to Do About Vaginitis"—William F. Guerriero, M.D., Dallas

"The Female Hormones"—Robert B. Greenblatt, M.D., Georgia Medical College

"Adnexal Disease"—Isadore Dyer, M.D., Tulane

"Emergencies in the First Stage of Labor"—Denis Cavanagh, M.D., University of Miami

"Radiation and Pregnancy"—Comdr. Thomas B. Lebherz, MC, USN, Bethesda Naval Hospital

Wednesday, April 19

"Diseases of Medical Progress"—Edward H. Rynearson, M.D., Rochester, Minnesota

"Physical Diagnosis"—Louis A. M. Krause, M.D., Baltimore

"Effects of Exercise on Cardiacs"—Herman K. Hellerstein, M.D., Cleveland

"Dropsy"—George T. Harrell, Jr., M.D., Gainesville, Florida

"Can You Diagnose Cancer?"—Emerson Day, M.D., New York City

"Nonsurgical Treatment of Cancer"—David A. Karnofsky, M.D., New York City

"Living With Cancer"—Malcolm Phelps, M.D., past president of AAGP, El Reno, Oklahoma

"Dermatology in Your Office"—Leon Goldman, M.D., Cincinnati

"Tumors of the Skin"—Richard D. Brasfield, M.D., New York City

Thursday Morning, April 20

"Common Ear Problems"—Lester A. Brown, M.D., Atlanta

"Surgery of the Nasopharynx"—Frederick T. Hill, M.D., Waterville, Maine

"Adolescent and Postadolescent Problems"—George A. Constant, M.D., Victoria, Texas, and Edward M. Litin, M.D., Rochester, Minnesota

Following the AAGP General Assembly, there is to be an 11-day cruise on the *M.S. Franca C,* one of the most modern cruise ships afloat. It will call at four ports: San Juan, Puerto Rico; Martinique, French West Indies; St. Thomas, Virgin Islands; and Nassau, Bahamas.

One of the spectaculars of this year's Assembly will be the mortgage-burning ceremony on Monday, April 17. By Assembly time, the mortgage on the Headquarters Building in Kansas City will have been retired, and an appropriate observance will be conducted at the Miami Beach Auditorium. The Assembly's social highlight, the President's Reception, will take place on Wednesday evening, April 19, at the Eden Roc Hotel. The new president, Dr. Floyd C. Bratt, of New York, will be inaugurated prior to the reception.

The Miami Beach Chamber of Commerce and native Floridians give assurance that April will be their finest month, weatherwise.

"Practical Therapeutics"

A LEDERLE SYMPOSIUM

Hotel Fontanelle, Omaha, Nebraska

March 16, 1961

Sponsored by the Iowa and Nebraska Chapters of AAGP

All Physicians Invited

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

MORBIDITY REPORT FOR MONTH OF JANUARY, 1961

Disease	Jan. 1961	Dec. 1960	Jan. 1960	Most Cases Reported From These Counties
Diphtheria	1	1	1	Webster
Scarlet fever	231	165	341	Jefferson, Johnson, Polk, Woodbury
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	250	103	100	Dubuque, Pottawattamie, Scott
Whooping cough	11	18	10	Polk, Pottawattamie
Brucellosis	14	11	40	Dubuque, Scott
Chickenpox	1017	895	848	Des Moines, Dubuque, Linn, Polk, Scott
Meningococcic meningitis	0	1	0	
Mumps	577	350	294	Des Moines, Dubuque, Polk, Story
Poliomyelitis	0	0	0	
Infectious hepatitis	94	64	53	Carroll, Polk, Pottawattamie, Woodbury
Rabies in animals	17	15	19	Boone, Tama
Malaria	0	1	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	23	43	51	For the state
Syphilis	78	93	110	For the state
Gonorrhea	92	145	83	For the state
Histoplasmosis	0	0	0	
Food intoxication	0	30	0	
Meningitis (type unspecified)	2	1	3	Buena Vista, Cass
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	1	1	
Salmonellosis	17	1	1	Polk
Tetanus	0	0	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	1	
H. influenzal meningitis	0	0	0	
Amebiasis	1	0	1	Story
Shigellosis	5	2	1	Chickasaw
Influenza	14	77	1359	Dickinson

THE ORIGIN OF FUTURE TB CASES

Three-fourths (39,000) of the new tuberculosis cases that occur in the United States each year through 1964 will be among the 22 per cent of Americans (40,000,000 of them) who had already been exposed to the disease at the start of the year 1960. The remaining 13,000 new cases per year will be among the 138,000,000 people who had had no such contact prior to January 1, 1960.

These simple figures very clearly point the direction which public health tuberculosis control programs must take during the next few years. *Besides continuing our case-finding program, we must put additional emphasis on adequate long-term follow up of all known cases.*

Our consuming interest in the newly-found case frequently permits us to neglect the old problem-case. Hundreds of cases are probably still infectious several years after having been originally diagnosed, and in many instances they are greater individual public-health hazards than are the newly diagnosed cases.

MAILING CONTAINERS FOR SPUTUM SPECIMENS

For some time, the State Hygienic Laboratories at Iowa City have had the policy of culturing all sputum specimens that have been submitted for tuberculosis examination. These culture studies are run in addition to slide tests for direct bacterial examination of tubercle bacilli in the sputum. For culture studies, the tubercle bacilli must of course be viable. This requirement precludes the use of the old type of container which included phenol in amounts sufficient to sterilize the sputum specimen.

The Laboratories, therefore, request that any physician, clinic or hospital that has any of the old type containers use them no longer. The old containers should be returned to Iowa City, together with a request for a supply of the new type of sputum specimen kits.

Each of the new kits will contain a data card on which, as the instructions indicate, it is essential that one use a soft-lead pencil. Any kit lacking the card that is to be filled in with a soft-lead pencil isn't one of the new type, and should be returned to the Laboratories, with a request for a supply of the new containers.

TUBERCULOSIS—NEW CASES
1960

County	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
ADAIR		1											1
ADAMS													
ALLAMAKEE	1											1	2
APPANOOSE			2					1					3
AUDUBON									1				1
BENTON				1					1	1			3
BLACKHAWK	1		1			1	2	3	1	2	2	1	14
BOONE			1			2					2	1	6
BREMER	1									1		1	3
BUCHANAN	1		1										2
BUENA VISTA													
BUTLER										1			1
CALHOUN													
CARROLL		1					1			1			3
CASS		1	1										2
CEDAR					1			1					2
CERRO GORDO	1		3		1		4			4			13
CHEROKEE	1							1	1	1	1	1	6
CHICKASAW												1	1
CLARKE				1									1
CLAY					1						1	1	3
CLAYTON	1			1	2		2		1	3			10
CLINTON	1		3		1			1	1	1			8
CRAWFORD				1						1			2
DALLAS			1	1						1			3
DAVIS	1												1
DECATUR	1			1	1		1		2				6
DELAWARE			1										1
DES MOINES	2	2	3	1		2	1		1			2	14
DICKINSON			1										1
DUBUQUE	2	3		2	1	1	1	1					11
EMMET													
FAYETTE	1							1	1				3
FLOYD		1			1								2
FRANKLIN													
FREMONT													
GREENE													
GRUNDY				1									1
GUTHRIE	1		1										2
HAMILTON			1	1									2
HANCOCK		1							1				2
HARDIN		1			1					1			3
HARRISON													
HENRY		1		1			1	1					4
HOWARD		1										1	2
HUMBOLDT	1		1			2		1				1	6
IDA			1										1
IOWA						1	1				1		3
JACKSON	1			1			1	1				1	5
JASPER			1			3		1					5

County	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
JEFFERSON				1				1	1	1		1	5
JOHNSON	3	2	1	1				2		2		2	13
JONES			1		1					1			3
KEOKUK	1									2			3
KOSSUTH	1									1		1	3
LEE			1	1	1		1	1					5
LINN	3		4	1	3	2	2	1	1	6		2	25
LOUISA				1	1					1			3
LUCAS		1	1			2				1			5
LYON			1										1
MADISON				1					1				2
MAHASKA	1	1		1				2					5
MARION					1					1	3	1	6
MARSHALL	1	1	2	1	1	1	1	1			1	1	11
MILLS						1							1
MITCHELL	1				1		1						3
MONONA													
MONROE										1		1	2
MONTGOMERY													
MUSCATINE			1	2						2	5		10
O'BRIEN								1					1
OSCEOLA												1	1
PAGE		1											1
PALO ALTO			1								1		2
PLYMOUTH		1	1							1			3
POCAHONTAS			1					1		1		1	4
POLK	5	2	4	7	3	5	3	2	9	3	3	9	55
POTTAWATTAMIE	2	2	1	1	1					2			9
POWESHIEK						1							1
RINGGOLD													
SAC													
SCOTT	4	4	5	1	1	2				1			18
SHELBY									1	1			2
SIOUX				1					1		1		3
STORY	1	1	1		1			1	1	3			9
TAMA										1			1
TAYLOR		1	1										2
UNION								1					1
VAN BUREN	1	1	1		1			1		1		1	7
WAPELLO	1	1		1	1		1	1				1	7
WARREN								1					1
WASHINGTON			3		1		1					1	6
WAYNE											1		1
WEBSTER			1									1	2
WINNEBAGO						1				1			2
WINNESHIEK				2		1	1			1	1	1	7
WOODBURY	3		5	1	3	3		1	3	1	1	3	24
WORTH			1										1
WRIGHT			1	1									2
TOTAL	46	32	62	38	31	31	26	31	27	54	24	40	444

REACTIVATED CASES—38

THE DOCTOR'S BUSINESS

Incorporating a Medical Building

HOWARD D. BAKER
WATERLOO

There is a general misconception regarding the tax savings possible through incorporation of a medical building, as compared with partnership or individual ownership. In reality, for an individual in a tax bracket below 47 per cent, a sizeable disadvantage may occur.

Since the federal income tax on corporate earnings is 30 per cent of the first $25,000 of net profit, it is a common fallacy to reason that if one is in a tax bracket in excess of 30 per cent, he will benefit taxwise by incorporating. This is true only if the earnings are *never* returned to the incorporator, for his personal use. If he needs those earnings currently, or may need them at some future time, he will be liable for regular individual income tax on the money paid him by the corporation as dividends. On the other hand, if all earnings remain in the corporation until it is liquidated, he will have to pay a capital-gain tax at a maximum rate of 25 per cent, since the earnings retained will have increased the value of his shares of stock.

As an example of the possible tax trap involved in corporate ownership, let us assume that four doctors invest $10,000 each in the stock of a medical building corporation, for a total of $40,000. The corporation acquires a $75,000 lot and building, and assumes a $35,000 mortgage. If the net profit on the operation of the building were $5,000 per year, the corporation would pay $1,500 in income tax each year, and would have $3,500 left with which to reduce the mortgage. Over a 10-year period, the corporation would pay $15,000 in taxes and would liquidate the mortgage.

Now assume the sale of the building at the end of that 10 years, for $75,000, and the liquidation of the corporation. In return for his original investment of $10,000, each stockholder would receive $18,750, and his capital gain of $8,750 would be taxable at the rate of 25 per cent. The four doctors collectively, then, would pay $8,750 in capital gains tax which, added to the $15,000 of taxes paid over the years by the corporation, would bring the total tax bill to $23,750, or 47.5 per cent.

It is therefore obvious that if those doctors, or at least two or three of them, were in tax brackets below 47 per cent, they would pay more tax if they incorporated than they would if they formed a partnership.

In addition to the possible tax disadvantage, one shouldn't forget that the cost of organizing a corporation ranges from $400 to $1,000, as compared with $25 to $100 for a partnership. The administration and accounting for a partnership are also much simpler and less expensive.

For persons in tax brackets below 47 per cent, the major advantage of incorporating lies in the limited liability of corporate stockholders as contrasted with the unlimited liability of partners. This can be an important factor if several doctors with individual practices are involved, rather than a professional partnership or a clinic group. If a corporation is organized for the purpose of securing limited liability, it will be best to establish rentals that will just meet expenses, and will yield no profit to be taxed to the comporation.

Another popular error is the idea that a corporation is ideal for transferring funds to children. There are no tax savings to be gained that way. Since the income of the corporation is subject to the 30 per cent tax up to $25,000 before the children get it, there is much less advantage in giving children corporate income than there is in giving them dividends or other income through a short-term trust or outright gift.

These are some of the problems involved in making a decision on the form of ownership to adopt for a medical building. Such a decision cannot and should not be made without first making a thorough study of all the factors involved. One should make that study in consultation with his legal and financial advisors, so as to assure a decision that will best fit his individual situation.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

WOMAN'S AUXILIARY
to the
IOWA STATE MEDICAL SOCIETY
1961 Annual Meeting, Des Moines
PROGRAM

MRS. R. F. NIELSEN, *Presiding*

Sunday, April 23

2:00-4:00 Pre-Convention Board Meeting, East Room, Hotel Savery—State Officers, Councilors, County Presidents, and Committee Chairmen

6:30 Dutch Treat Supper (ALL board members, convention committee chairmen, and husbands) Garden Room, Hotel Kirkwood

Monday, April 24

8:00-4:00 Registration, Mezzanine, Hotel Savery
ALL physicians' wives welcome

8:30-9:30 Hospitality Room—Terrace Room, Hotel Savery
Hostesses—District I, Mrs. M. F. Kiesau, councilor

9:30 Conference of Delegates—Terrace Room
Call to Order—Mrs. R. F. Nielsen, Cedar Falls, president
Auxiliary Pledge—*I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals.*
Greetings—Mrs. F. C. Coleman, Des Moines, president Polk County Auxiliary
Response—Mrs. B. F. Kilgore, Des Moines, state president-elect
Introductions: Mrs. Harlan English, Danville, Illinois, National president-elect.
Convention Announcements: Mrs. Louis Goldberg, Des Moines, convention chairman
Convention Rules of Order—Mrs. D. C. Wirtz, Des Moines, parliamentarian
Recommendations of Reading Committee (for acceptance of previous annual meeting minutes)
Presentation of Auditor's Report—Mrs. J. H. Matheson, Des Moines, state treasurer
Report of Finance Committee and presentation of 1961-62 budget—Mrs. E. A. Vorisek, Des Moines
Report of 1961 Nominating Committee (first reading) Mrs. G. A. Paschal, Webster City
Election of 1962 Nominating Committee
Reports of Officers
Reports of Committees
Project Roll Call of County Presidents

11:00 "Your Auxiliary Is Important"—Mrs. Harlan English, National president-elect
Memorial Service—Mrs. J. L. Kestel, Waterloo

11:30 Recess for Luncheon

12:00 Luncheon—Mrs. R. F. Nielsen, presiding
Honoring Mrs. Harlan English and past state presidents of the Iowa Auxiliary
Welcome and Introduction—Mrs. Louis Goldberg, Des Moines

2:00 "Personality in the Home"—Glenn S. Lull, Des Moines, president, Nebraska-Iowa Chapter of American Interior Decorators

3:30 Physicians' and Wives' Art Exhibit—Veterans Memorial Auditorium

Tuesday, April 25

8:00-12:00 Registration, Mezzanine, Hotel Savery
ALL physicians' wives welcome

8:30-9:30 Hospitality Room-Terrace Room, Hotel Savery
Hostesses—District I, Mrs. M. F. Kiesau, Postville, councilor

9:30 Conference of Delegates—Terrace Room
Report of Nominating Committee (second reading), Mrs. G. A. Paschal, Webster City
Election Instructions—Mrs. D. C. Wirtz, Des Moines, parliamentarian
Election of Officers
Election of Delegates to National Auxiliary Convention
Convention Courtesy Resolutions
New Business
Installation of Officers—Mrs. E. A. Larsen, Centerville, past president
Report of Registration Committee—Mrs. J. F. Gerken, Waterloo, District VI councilor

11:00 "Auxiliary Angles"—O. N. Glesne, M.D., president-elect Iowa State Medical Society and chairman of Auxiliary Advisory Board

11:30 Recess for Luncheon

12:00 Luncheon in honor of Mrs. R. F. Nielsen, retiring president, Terrace Room, Hotel Savery—Mrs. C. H. Flynn, Clarinda, past president, presiding
Guests of honor:
E. F. Van Epps, M.D., president, Iowa State Medical Society
O. N. Glesne, M.D., president-elect, Iowa State

ATTEND THE PRESIDENT'S COFFEE

Hospitality Room, 8:30-9:30
Monday and Tuesday Mornings

MEET YOUR STATE OFFICERS

AMA AUXILIARY PRESIDENT-ELECT

Mrs. Harlan English, of Danville, Illinois, president-elect of the National Auxiliary, is to be the guest of the Iowa Auxiliary at its 1961 Convention, April 24 and 25. Besides being successively county and state Auxiliary president, and for three terms National Auxiliary secretary, she has been active in Cancer Society, children's home, Red Cross, Girl Scout, day nursery, Gray Lady, United Fund and United Hospital work in her home town. She is a graduate of Indiana University, and taught high school science before her marriage.

Medical Society and chairman of Advisory Board to the State Auxiliary

G. H. Scanlon, M.D., member of Advisory Board

C. W. Seibert, M.D., member of Advisory Board

R. F. Birge, M.D., secretary, Iowa State Medical Society

D. L. Taylor, executive director, Iowa State Medical Society

Presidents of Iowa Interprofessional Association Auxiliaries

Presentation of Community Health Service Award—Mrs. E. B. Dawson, Fort Dodge, chairman

SPRING FROLIC

Tuesday, April 25, 9:00-12:00

Grand Ballroom—Hotel Savery
Benefit
Woman's Auxiliary Health Educational Loan Fund

Evan Morgan's Orchestra

Standard Medical & Surgical Company will sponsor the social hour from 8:30

Presentation of Essay Contest Awards—E. F. Van Epps, M.D., president ISMS

Inaugural Address—Mrs. B. F. Kilgore, Des Moines

Presentation of Past President's Pin—Mrs. L. R. Hegg, Rock Valley

2:00 "Women in American History"—Mr. Paul Engle, author, lecturer, professor of English, State University of Iowa

3:30 Post-Convention Board Meeting, East Room, Hotel Savery

7:00 Banquet—Terrace Room, Hotel Savery

9:00 "Spring Frolic"—Dance (Informal)—Grand Ballroom, Hotel Savery. (Benefit Auxiliary Health Educational Loan Fund)

OUR PRESIDENT SAYS

February, the month in which I am writing this letter, is the month of birthdays. Abraham Lincoln and George Washington will be remembered this month. Thanks to Americans of their stature, we inherited a precious gift of freedom. We are the beneficiaries of the American way of life, the system of free enterprise.

Dr. Snyder's charge to the 1949 graduating class of Northwestern University, bears repeating: "I hope that 50 years from now freedom will still exist in this land of ours. I hope we shall not have been enslaved by either an all-powerful federal government in Washington, or by debt, much of it incurred in the name of a vague concept called 'security,' which will inevitably crush all initiative. . . . I do not wish to be taxed so that my grandchildren need not work for a living or pay their doctor bills."

Freedom implies the right to fail or to succeed. The rewards of victory are tawdry unless they are won under the hazard of defeat. Who would watch a football game with only one team on the field? Yet that is what some of our social planners would like to see established. They would remove all elements of conflict, of struggle, of hazard from life, or as they put it, they would extend security "from the cradle to the grave."

Mr. Justice Holmes said "Security is generally an illusion," and the slavery imposed by a planned economy can be much worse than that of poverty or disease. The pioneers who settled this state of ours were not seeking a life of either ease or security. They were eager to work, and they gloried in opportunity, not security.

Would large billboards on all the roadsides awaken America to retreat from her desire for security at all costs? These billboards could simply state:

FOR ABSOLUTE
SOCIAL SECURITY,
GO TO JAIL!

The Warner Swasey Company of Cleveland, Ohio, apparently share this sentiment:

Want Security?
Throw a brick through a window

"You'll get it fast! Three meals a day, free! No taxes (they'll "soak the rich" for your support). Free housing, free clothing, free medical care—no worry about your future: You've had it!

"But obey orders, or else! Stand up to be counted! March in line! No back talk! Do what you're told!

"Jail—Socialism—Communism—the welfare state. They're all the same . . . same 'benefits'—same obligations—same 'rewards'—same payments.

"Of course every once in a while, promises backfire, and you get a club on the head instead of the security you've been promised. But keep on throwing bricks at the profit-and-loss system and you'll smash it; then you'll get your 'security.' But you won't like it."

LILLIAN P. NIELSEN (MRS. R. F.)
President

RECEPTION FOR LEGISLATORS' WIVES

The wives of Iowa legislators were honored by the Auxiliary to the Polk County Medical Society at a tea on Tuesday afternoon, January 31, in the Mott Auditorium of the new Des Moines Y.M.C.A. Approximately 150 doctors' wives and guests heard Mr. George E. Hall, of Chicago, a staff member in the AMA's Law Division, and secretary of its Division on Medical Legal Problems.

Mrs. Norman Erbe, wife of the governor of Iowa, was an honored guest. Mrs. W. L. Mooty, wife of the lieutenant-governor, Mrs. George L. Paul, president of the Legislative Ladies' League, and Mesdames Leo Pearlman and John Bakody, Auxiliary past-presidents, poured. Mesdames Ralph Hines, Charles Latchem, Louis Noun, William Morrissey and Don Newland were in charge of arrangements, and Mrs. F. C. Coleman, president of the Polk County Auxiliary, presided at the meeting.

MEDICAL ARTISTS

Something new has been added for the 1961 Annual Meeting. An art exhibit in the Scientific Exhibit area at the Veterans Auditorium during the ISMS Annual Meeting, is being sponsored by the Auxiliary. Entries are limited to members of the ISMS and its Auxiliary. All work must be completely original and entirely by the artist submitting it, with a total of four entries which may be in one class or any combination of classes. A letter setting out all entry regulations and description of classes for awards has been sent to each Auxiliary member. If your physician husband is the artist in your family, urge him to enter.

LAST CALL—

for Auxiliary bills you have on hand for the year 1960-1961. Please send them, with your receipts, to the Finance Chairman before March 25 so they may be included in this fiscal year's audit.

MATILDE P. VORISEK (MRS. E. A.)
Finance Chairman

COUNTY AUXILIARIES

Black Hawk County

The "little red school house" set the theme for the Medical Ball sponsored by the Black Hawk County Auxiliary on February 4. Four hundred sixty persons were on hand to enjoy a dinner, skit and dancing. The $1,000 profit from this event will be given to medical charities.

Mrs. L. J. Henderson served as general chairman, assisted by Mesdames J. L. Kestel, decorations, T. L. Trunnell, Fred Gerken and R. F. Nielsen, skit and T. P. Board, tickets.

Polk County

A touch of spring appeared in February when members of the Polk County Auxiliary entertained their guests at a benefit bridge, February 10. Hyacinth plants of various hues prompted the 160 bridge players to do their best, as they were the table prizes. The proceeds from this event make possible the Future Nurses Club program in Polk County.

MAKE A DATE!

Get ready .....February
Get set .....March
Go! .....April

Yes, state convention will be April 24 and 25. If you record these dates in your day book so no subsequent engagements can prevent your coming, you too are *getting ready*.

This meeting is especially for you, the doctor's

wife, and only for you. Business will be transacted in as palatable, interesting and brief a fashion as feasible within the limits of parliamentary procedures.

Our major endeavor will be to have each of you who attend leave with the comment: "I would not have missed it for anything."

IN MEMORIAM

The Auxiliary was grieved to learn of the death, January 9, 1961, of Mrs. F. W. Mulsow, of Cedar Rapids, who was our state president in 1942. She also served capably in the National Auxiliary, and at one time was a National vice-president. Recently her poor health forced her to be inactive, but she maintained membership in the Auxiliary. Our sincere sympathy goes to Dr. Mulsow, who survives her.

AMERICAN MEDICAL EDUCATION FOUNDATION

Another county makes good its pledge and alliance in extending the aims of the medical profession for A.M.E.F. through our Auxiliary.

Polk County Auxiliary has just contributed the amount of $1,559.30 to this fund. Its project was a sale of Christmas cards. It behooves all of us to know more about it. We are very proud of the Polk County Chapter. Theirs is surely a splendid effort to help in the realization of a dream—a dream and hope that all our children may be admitted to the colleges of their choice, and may have an opportunity to pursue their chosen fields of interest.

It is our fervent prayer that our American colleges will continue to expand to meet the population explosion. It is our hope that our medical education will continue to progress under the framework of freedom. Never have we had so much opportunity. Our prayers must be backed by the efforts of each member. There must be adequate support for A.M.E.F. The contribution of $5.00 per member is not too difficult a goal.

This is surely an exciting year. Never underestimate the power of a group of women. Let's have more county A.M.E.F. reports. Congratulations to the Polk County Auxiliary.

ELAINE DRIVER (Mrs. R. W.)
A.M.E.F. Chairman

MEETING YOUR MEMBERS

Candidate No. 8

Honoring Hegg

Mrs. Lester R. Hegg

Offhand, one might expect our candidate from Sioux County to have a bit of Indian blood. No, here again we have a charming Norwegian. It is amazing how many Scandinavians have attained prominence in this organization, particularly this year.

Some of this prejudice can be attributed to the affection we feel for a brother of hers who sells cars (no commercials allowed), in my home town. They have a family trait which endows both of them with blue eyes and blonde hair. Although Palma Hegg is five feet eight inches tall, she insists she is "not the skinny type."

She has no daughters by blood relation, but has garnered two by virtue of two sons who married. Actually, everything goes by two's for her. Two sons brought two daughters who brought two sons and two daughters. Now you know—she's a grandmother.

In case you are wondering about her activities, here are some:

FUN—Singer, pianist, bridge player, bowler, golfer, flower arranger, "book-worm," traveler.

WORK—Serves many state, county and community organizations: Vice Chairman, 8th district of Republican Women; County chairman of Federated Woman's Clubs, ten year tenure as Chairman of city Red Cross, etc.

It helps to be witty
When writing a ditty.
To describe someone funny
Or writing for money.
That gal's so busy
She's just in a tizzy
A-putting Auxiliary out-front.

She has been awarded,
By vote was elected
To be Woman of the year.
Her hometown holds her dear.
Her height: five foot-eight
Best we don't guess her weight,
She looks really fine to us all.

In politics active
No-one calls her passive.
She just fights for her causes
And wins more applauses.
Politics? Cancer?
She has the answer
And goes on the people to call.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls
President-Elect—Mrs. B. F. Kilgore, 5434 Woodland, Des Moines 12
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PAGES 244-247 CONTAIN A REPORT ON BLUE SHIELD BY THE ISMS POLICY EVALUATION COMMITTEE

APRIL, 1961

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PARKE, DAVIS & COMPANY, Detroit 32, Michigan

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Our Responsibility to Our Medical Heritage

NORMAN B. NELSON, M.D.
DEAN, S.U.I., COLLEGE OF MEDICINE

Every physician has many responsibilities, and perhaps the most important of them all is his responsibility to perpetuate his medical heritage. One very important contribution that each physician can make to this end is to do his part in making certain that there are adequate numbers of excellent applicants for entrance into medical school. There will always be plenty of mediocre candidates, but there will never be enough outstanding ones.

The faculty of your College of Medicine is so concerned about the diversionary effect of nonbiological science and other programs that it is now using the major share of its American Medical Education Foundation money to provide tuition scholarships to attract outstanding students. It is already obvious that this program is bringing in a better calibre of students to our school.

Although contributions to AMEF will help, your individual and collective attention to this problem is imperative. Already the Iowa State Medical Society and several county medical societies are embarking upon constructive recruitment programs. The future of medicine depends more upon the capabilities of the young people we can attract into our medical school than upon any other single factor. Dr. Robert Hardin, associate dean, is chairman of a special committee of the College of Medicine devoted to recruitment. I'm sure he will appreciate your cooperation.

A great deal of misinformation has been disseminated concerning the study of medicine. I am rather deeply disturbed by the emphasis that has been placed upon "guidance" in the U. S. government's recent educational defense program. It is my feeling that as yet we have not reached the stage in behavioral studies where we can determine for a youngster precisely what field he should enter. To oversimplify, I contend that *a good man will be a good man, no matter what he does.* The following—an editorial that I was recently asked to write, on "Medicine as a Career"—attempts to answer some of the questions that young people have asked of me:

"To the Young People of Iowa:

"As a senior in high school, I asked many successful men the following question: 'If you could live your life over again and could do anything you wanted to do, what would you do?' At that time I was impressed by the number who said they would study medicine. I have wondered about this many times. It is true that the physician has earned a place of honor and respect in the community. It is also true that while he works hard, he usually earns a good living. Far more important, however, are his opportunities to lose himself in service to his fellow men. This is the basis of happiness in life. *A physician is needed, and he knows it.*

"Who can become a physician?—Anyone with normal intelligence can become a physician; in fact, an excellent physician. All that is required is a willingness to make the most of each day.

"Many people have the idea that a young person, to become a physician, has to be born with certain qualities. This is not so. The greatest physician today was once just an ordinary child. He was not born great or superior. Over a period of time he became so.

"Many young people say, 'But I have no particular interest in medicine.' No one is born with interests in life. As time goes on, these are developed, depending upon circumstances. The field of medicine is so broad that it is inconceivable that anyone should not be able to find in it an area of tremendous interest. The more one knows about any subject, the more interesting

Norman B. Nelson, M.D., Dean

it becomes. The more one masters a subject, the more fun it becomes. This is true of both physical and intellectual subjects.

"Walt Whitman, in his LEAVES OF GRASS, has said, 'It is inherent in success, no matter what, that a greater struggle becomes necessary.' Because of the success of medicine, people are demanding more and more of the medical profession. 'From him that hath, much is expected.'

"In bygone days, Robert Louis Stevenson wrote:

'There are men and classes of men that stand above the common herd: the soldier, the sailor and the shepherd not infrequently; the artist rarely; rarelier still the clergyman; the physician almost as a rule.'

"The Arabic for physician is *hakim*. *Hakim* means philosopher or wise man. The word *philosopher* comes from *philos*, or loving, and *sophus*, or wisdom. I like the concept of doctors being philosophers."

This simple editorial presents a philosophy about people to which I subscribe. Almost everyone is capable of developing an incentive to pursue intellectual goals far beyond our dreams. Neither Churchill nor Einstein gave evidence of brilliance in his youth. A professional counselor might well have guided either of them into a useless life. Winston Churchill once said, "I am surprised that in my later life I should have become so experienced in accepting honorary university degrees when, as a schoolboy I was so bad at passing examinations. In fact, one might say that no one ever passed so few examinations and received so many degrees!"

Every physician in Iowa should ask himself the question: "What am I doing to insure our medical heritage?"

Ruben Nomland, M.D.

IN MEMORIAM

Ruben Nomland, M.D.

1899-1960

Ruben Nomland died in Iowa City on April 13, 1960. His death was a profound loss to medical education, to the medical profession and to humanity.

Dr. Nomland was born in Buxton, North Dakota, on March 8, 1899. He received his bachelor's degree from the University of North Dakota in 1922 and his doctorate in medicine from Rush Medical College in 1925. He interned at Cook County Hospital and was a fellow at the Mayo Clinic and at Rush, becoming an instructor at the latter school. He came to Iowa City in 1936 as professor and head of the Department of Dermatology and Syphilology at the University of Iowa, the position he held at the time of his death.

Dr. Nomland was not a man to devote his attention to one small area of medicine. As his writings indicate, his interests were wide and varied, and extended beyond the specialty of dermatology. He never wrote a paper which was not an important contribution to medical knowledge, and he continued to write throughout his life whenever he had something of value to say. He contributed to our knowledge of pseudoxanthoma elasticum, nevoxanthoendothelioma, senile sebaceous adenoma, cholinergic itching and cholinergic urticaria, basal-cell nevi, metastatic carcinoma, circulatory disorders of the lower extremities, acne, syphilis, malignant papulosis, and many other subjects. He also wrote an excellent text for the teaching of dermatology to medical students.

Dr. Nomland was a teacher of outstanding ability at both the undergraduate and graduate levels. He was able to instill the essence of dermatologic diagnosis and treatment into the medical student to a remarkable degree. In training dermatologists, he emphasized solid, honest diagnosis and practical therapy, and the dermatologists he trained have been notably excellent in the care of the sick. Yet a third of his men have continued in full-time or part-time teaching and research.

Dr. Nomland was a kindly man, deeply beloved by those associated with him. He hated personal controversy, yet when goaded deeply enough by ostentation, dishonesty, incompetence or vacuous and specious argumentation, he possessed the ability to expose the sham with a minimum of perfectly chosen words. His death is a heavy loss, a loss to his patients of a kind and able physician, a loss to the world of a brilliant inquiring mind, and a loss to his associates of a beloved person.

Ruben Nomland, physician, scientist, teacher and friend, will live on in our memories.

ROBERT G. CARNEY, M.D., and
CHRISTIAN E. RADCLIFFE, M.D.

Reprinted from AMA ARCHIVES OF DERMATOLOGY, 82:172-173, (Aug.) 1960.

Retirements

E. G. GROSS, M.D.

Professor E. G. Gross retired, on July 1, 1960, from the chairmanship of the Department of Pharmacology at the State University of Iowa, after completing 31 years of teaching and research at the institution.

Dr. Gross received his Ph.D. in biochemistry from the University of Wisconsin in 1921, served as a fellow, instructor and assistant professor, successively, at Yale University from 1920 until 1929, and then joined the S.U.I. Pharmacology Department, of which Dr. O. H. Plant was then chairman. Dr. Gross received his M.D. degree from Iowa in 1930. Following Dr. Plant's untimely death in 1939, Dr. Gross became the department head.

Dr. Gross's contributions to pharmacology—both teaching and research—have been most numerous. He is the author of approximately 80 scientific articles and three books. Although his interests have been very broad, his major contributions have probably been in the area of morphine and synthetic analogs. He has conducted many studies and experiments in drug addiction, metabolism, and the physiological alterations induced by drugs. He holds memberships in many scientific organizations. He is one of only a few individuals who hold memberships in as many as three of the societies that make up the American Federation of Biologists—the Biochemical, the Physiological and the Pharmacological. He served as president of the American Society for Pharmacology in 1955.

In the field of teaching, he has also made significant contributions. While serving at Iowa, he has taught pharmacology to some 6,000 students of pharmacy, dentistry and medicine. During World War II, he and one other staff member had the entire responsibility for teaching pharmacology under the accelerated program of the College of Medicine. Graduate training in pharmacology was instituted after the War, and the staff was increased to five full-time members. Since then, 14 Ph.D. degrees and numerous M.S.'s have been granted. Dr. Gross has always been a strong stimulus to his associates and his students, alike. All know him as a man of high integrity, always placing the welfare of others before his own.

Dr. Gross has officially retired, but his interest in pharmacology has not ceased. He recently began collaborating upon another book, and he only recently retired from the editorial board of THE AMERICAN JOURNAL OF PHYSIOLOGY AND APPLIED PHYSIOLOGY.

JOHN PAUL LONG, Ph.D., *associate professor of pharmacology*

WAID WRIGHT TUTTLE, Ph.D.

The retirement of Dr. Waid Wright Tuttle, professor of physiology, in July, 1959, terminated an active teaching career of 39 years. He was born September 4, 1892, at Wrightsville, Ohio. After receiving his B.A. degree at Huntington College, in Indiana, in 1915, he taught science in the Arvada, Colorado, High School until 1919. The M.A. degree was awarded him in 1922 by the University

E. G. Gross, M.D.

Waid Wright Tuttle, Ph.D.

of South Dakota, where he had been serving as principal of the University High School. Then, after returning to his native state, he earned his Ph.D. degree at Ohio State University in 1924.

"Tut," as he is known to his colleagues and perhaps to many of his former students as well, was appointed assistant professor of physiology at the State University of Iowa in 1926, after he had served in a like capacity at the University of Illinois. During the next 33 years of uninterrupted service to the Department of Physiology at S.U.I., he advanced to associate professor in 1936 and to professor in 1938. An honorary Sc.D. was awarded him by his *alma mater*, Huntington College, in 1955.

As evidence of his creative contributions to his field, it can be pointed out that he has written or revised 28 textbooks or monographs. Furthermore, he is the author or the coauthor of 146 research reports. These papers, on such diverse topics as tendon reflexes, muscle tone, the physiology of exercise (pulse ratio tests of physical efficiency), strength and endurance responses to dieting, nutrition (specific dynamic action, blood sugar, niacin and thiamine intakes, nitrogen balance), instrumentation (thermocouples and dynamometers) and sensory physiology (localization of warm and cold receptors), attest to his versatility and curiosity. In addition to the contacts he has made with literally thousands of undergraduate students in medicine, dentistry and other areas, he has served as advisor for 119 graduate students in the areas of physiology, physical education, nutrition and psychology. These contributions constitute an admirable record of achievement.

"Tut," in retirement, has not lessened his activity to a noticeable degree, for in the relatively brief period of 1½ years he has extensively revised two textbooks, written one monograph and served as an advisor in the Department of Physical Education.

BYRON A. SCHOTTELIUS, Ph.D.

Veterans Auditorium Telephone Number
Through Which Physicians Who Are
Attending the ISMS Annual Meeting
Can Be Reached, on

April 23-26, 1961

CHerry 3-3562

The telephone number of the temporary office of the State Medical Society at the Auditorium on those four days will be CHerry 3-3549.

POSSIBLE TIE BETWEEN HYPERTHYROIDISM AND MENTAL ILLS

A functional relationship has been suggested between hyperthyroidism and mental disease by Dr. Ben Bursten, of Cinicinnati, writing in the March, 1961, ARCHIVES OF GENERAL PSYCHIATRY. According to Dr. Bursten, "While the incidence of hyperthyroidism in a psychotic population is low, there are sufficient cases of psychosis in populations of thyrotoxic patients to suggest a functional relationship between the two disease processes."

There is no one particular type of psychosis characteristic of the hyperthyroid patient, he continued. "Sometimes the course of the illness suggests that the thyrotoxicosis has precipitated the psychosis, and sometimes it would seem that the anxieties and activity associated with psychotic decompensation have precipitated the thyrotoxicosis," he said. "A third possibility is that both processes may develop simultaneously as a consequence of psychodynamic shifts."

"In many cases, there is probably a joint action between the two diseases," Dr. Bursten said. "Once these processes are started, it is easy to see how they can augment each other." On the other hand, he pointed out, the two diseases do not follow parallel courses. "This serves to emphasize that even though the two processes may be functionally related, many other etiological factors are involved, and while one process may precipitate the other, it is not necessary for the elaboration or continuation of the symptoms of the other process."

SOME FATS DON'T GUM UP THE BLOOD

A study in the November, 1960, ARCHIVES OF INTERNAL MEDICINE by Drs. M. A. Shearn and Aristides Gousios, of Oakland, indicates that some fats don't increase the viscosity of blood. Other investigators have suggested that a high level of fats in the bloodstream, by increasing the adhesiveness of red blood cells, might be responsible for a slowing of circulation, and have cited experiments on dogs and hamsters in support of their contention.

The Oakland physicians' study involved 13 human subjects to whom fats were administered by injection. "The blood lipid levels increased in each experiment, reaching in some instances a threefold increase," they reported. "In spite of the magnitude of this rise in total lipids, there was no significant change in the viscosity of the blood."

Their study differed from the animal studies in that their method reflected the viscosity of the blood in medium-size vessels, where most blood clots occur in man, rather than the viscosity in small blood vessels. They say that their future studies will be designed to measure the effects of ingested fats and of intravenously-administered fats other than those they have already tested.

Scientific Articles

Bromide Intoxication

A Survey of 15 Years' Experience at S.U.I. Hospitals

DAVID GREEN, M.B., B.S. (Melb.)

IOWA CITY

Bromides are capable of producing serious toxic effects. The manifestations of this toxicity are often confusing and misleading. The drug can be obtained without prescription, and is the most important constituent of several popular patent medicines.

Little attention has been paid to the problem of bromide intoxication in recent years. Bromides were used extensively in the treatment of epilepsy until diphenylhydantoin was introduced. Bromides and phenobarbital were used for neurotic and psychotic patients early in this century, though the medical profession was well aware of the danger of bromide intoxication at that time. During the past 25 years, bromides have been largely supplanted by the newer anticonvulsants and sedatives, however, and it seems to have been tacitly assumed that the condition is now quite uncommon. Yet bromism, as a persistent and important problem, deserves review.

The purpose of this paper is to present a summary of the experience with bromide intoxication in the past 15 years at the University Hospitals, Iowa City, and to review the problems of diagnosis and treatment. The histories and courses of three patients seen during a 1½-year period in the private neurology service will be reviewed in detail.

COMMENTS ON THE COLLECTED DATA (TABLES 1-5)

1. Toxicity symptoms and signs appeared when the serum sodium bromide level was above 150-200 mg. per cent.

2. Mental changes and ataxia were the commonest presenting symptoms.

3. Many of the patients with bromide intoxication were, in addition, either alcoholic or severely neurotic.

4. In the 15-year period 1945-1960, which was reviewed, sodium chloride and fluids constituted the commonest remedy used.

5. The sources of the bromides were as follows:

a. Doctor's prescription ..... 8 cases
b. Bromo-Seltzer ..... 5 cases
c. Miles Nervine ..... 4 cases
d. Abbott—Five Bromides ..... 1 case
e. Source unknown ..... 6 cases

6. The incidence of bromide intoxication appears to be decreasing somewhat. A previous survey of patients with bromide intoxication at this institution revealed that in the seven-year period between 1938 and 1945 there were 33 cases, in contrast with the presently reported 27 cases seen during the subsequent 15 years.[1] An extensive study on bromide intoxication was carried out in 1946 at University Hospitals, and it revealed that signs of toxicity did not develop in patients given bromides deliberately over an extensive period of time until the serum bromide levels were above 200 mg. per cent (sodium bromide levels of 259 mg. per cent).[2]

7. The development of signs and symptoms of toxicity is probably a function of the patient's age, general physical state, renal function and length of exposure to the drug. Often a patient who is recovering may be admitted to the hospital at a time when the serum sodium bromide level is falling. Thus, it is difficult to state the toxic level dogmatically. The patient's clinical state, the history of drug ingestion and a serum sodium bromide level above 100-125 mg. per cent seem sufficient justification for the diagnosis of bromism.

Dr. Green is an instructor in the Department of Neurology at the S.U.I. College of Medicine.

TABLE I

SUMMARY OF DATA CONCERNING BROMIDE INTOXICATION UNIVERSITY HOSPITALS, IOWA CITY, 1945-1960

Case Number	Sex	Age	Presenting Symptoms	Serum Bromide Levels (Mg. Per Cent as Sodium Bromide) Initial	Final
1	F	50	Tiredness and Nervousness	377	4.5
2	M	36	Fatigue and Nervousness	288	0
3	F	63	Confusion and Suicide Attempt	204	0
4	F	35	Confusion and Dysarthria	242	64
5	M	49	Convulsions and Rash	254	89
6	F	24	Ataxia and Dizzy Spells	180	100
7	M	39	Headache	162	121
8	M	49	Headache and Depression	202	76
9	F	45	Ataxia	326	0
10	F	44	Rash	348	114
11	F	36	Ataxia and Drowsiness	400	87
12	M	67	Mental Confusion	145	Trace
13	M	33	Mental Confusion, Convulsions	150	Trace
14	F	51	Mental Confusion, Incoordination, Semi-comatose	520	53
15	M	63	Difficulty With Walking	168	0
16	F	35	Personality Change, Rash	176	77
17	F	50	Anxiety	124	44
18	F	50	Fatigue	225	0
19	F	43	Nervousness	122	80
20	M	21	Comatose	136	0
21	F	38	Psychotic	262	0
22	M	42	Confusion	280	158
23	M	42	Weakness, Depression, Stupor	448	336
24	F	55	Disoriented, Rash	363	63

Mental changes and ataxia were the usual presenting symptoms. The serum bromide levels in the patients varied between 122 and 520 mg. per cent

8. Other authors have previously drawn attention to the frequency of bromide intoxication due to the ingestion of Bromo-Seltzer.[3, 4]

CASE REPORTS

Case 1. R. B. was a 43-year-old restaurant owner. The patient had had persistent headaches over the past seven years, following a car accident. Four months prior to admission, he had noticed increasing fatigue. He presented with a staggering gait, which had been present for a few weeks. Weight loss, constipation and vomiting were noted. He had become increasingly drowsy, and there was marked mental deterioration. At the time of admission, he denied bromide ingestion.

On examination, the following abnormalities were noted. The patient appeared chronically ill and somewhat disoriented. His speech was characterized by a constant flow of irrelevant statements. Finger-nose testing revealed slight ataxia bilaterally. The gait was unsteady. The patient appeared cachetic, and the original impression of most of the examiners was that he had metastatic carcinoma.

The serum bromide level was 241 mg. per cent. This was gradually reduced to normal during his four weeks in the hospital. The neurologic abnormalities cleared. After recovery, he admitted having taken excessive amounts of Bromo-Seltzer because of headaches.

An electroencephalogram showed poorly developed alpha activity, 9 to 11 per sec., low voltage, and low voltage theta, chiefly attributable to drowsiness. No focal slow activity was noted. Impression: non-diagnostic type of electroencephalogram. The electroencephalogram was done five days after the serum bromide level had been reported as 241 mg. per cent.

Case 2. C. W. was a 63-year-old housewife who came to the hospital because of attacks of syncope and periods of dizziness. She had fallen as a result of these attacks. For the past two years, she had complained of occipital headache. Her gait had become progressively unsteady.

When questioned directly about drugs, the patient remarked that she had been taking a brown, salty liquid for many months. It had been prescribed by her physician, and was intended to relieve her headache. The liquid had also relieved her "jitters."

Physical examination revealed the following abnormalities. The patient was a garrulous elderly woman, wearing colored glasses. She was oriented as to time and place, though her fund of general information was markedly limited. Her gait was guarded and somewhat ataxic.

The serum bromide level was 202 mg. per cent.

The patient was advised to discontinue her medication, which was thought to contain bromides. On a subsequent visit, she confessed that she had

TABLE 2

SUMMARY OF DATA CONCERNING BROMIDE INTOXICATION
UNIVERSITY HOSPITALS, IOWA CITY, 1945-1960

Case Number	Year Admitted	Admitting Service	Supplementary Diagnosis	Clinical Result
1	1945	Neurology	Involutional Melancholia	Recovery
2	1945	Neurology	Alcoholism	Recovery
3	1945	Medicine	Senile Psychosis	Admitted to State Hospital
4	1946	Medicine	Alcoholism, Psychoneurosis	Recovery
5	1948	Medicine	Barbiturate Addiction	Recovery
6	1948	Neurology	Psychoneurosis	Recovery
7	1948	Medicine	Anxiety State	Recovery
8	1948	Medicine	Alcoholism, Psychopathic Personality	Recovery
9	1949	Neurology	Syphilis	.....
10	1950	Neurology	Mental Deficiency	Recovery
11	1950	Medicine	Psychoneurosis	Improved
12	1951	Medicine	.....	Improved
13	1951	Neurology and Neurosurgery	Epilepsy	Improved
14	1951	Neurology	Depression	Improved
15	1951	Neurology	.....	Discharged Against Advice
16	1951	Neurology	.....	Improved
17	1952	Medicine	Psychoneurosis	.....
18	1952	Medicine	Psychoneurosis	.....
19	1952	Medicine	Depression	.....
20	1955	Medicine	Alcoholism, Sociopathic Personality	Admitted to Mental Health Institute
21	1955	Neurosurgery	Psychoneurosis	Improved
22	1956	Neurology	.....	Improved
23	1957	Neurology	Alcoholism	Improved
24	1959	Neurology	.....	Improved

There were a considerable number of patients in the group with serious psychiatric difficulties. Improvement occurred in all bromide-intoxicated patients.

continued using the mixture, though in smaller amounts. Her serum bromide level was 170 mg. per cent, and she stated that she was less "staggery." She wouldn't give up the drug completely, because of her "jitters."

Case 3. A. P. was a 46-year-old housewife with an extensive psychiatric history. She was considered to be a chronic schizophrenic, and had been a chronic alcoholic for years. It was known that she had taken tranquilizers and barbiturates to an excess. She was referred to the neurology service because of marked ataxia of gait and mental deterioration.

Physical examination revealed the following abnormalities. The patient was emaciated and malnourished. She was quite tense, and there were frequent facial grimaces. The speech was slurred, and the gait was unsteady. The patient denied taking bromides.

The serum bromide level was 260 mg. per cent, and on being confronted with the laboratory findings, she confessed having taken excessive numbers of Bromo-Seltzer tablets. She was advised to stop taking the drug. Afterward, she made a rapid recovery and gained weight.

DISCUSSION

1. *Bromide Poisoning—Clinical Aspects.* From 2 to 10 per cent of patients entering psychiatric hospitals have been reported to show some degree of bromide intoxication.[5] The usual manifestations are as follows:

A. Dermatological. Acne-like eruptions are common. A fungating lesion, nodosa bromoderma, has been described. Pemphigus-like lesions are an uncommon dermatologic presentation. Only 25 per cent of patients with symptom-producing bromism have a skin rash.[5]

B. Glandular and conjunctival. Mild conjunctivitis occurs. Excessive secretory activity occurs in the glands of the orbit, nose and respiratory tract.

C. Gastrointestinal. Anorexia, coated tongue, foul breath and sordes are described. Constipation, dehydration and fever are common presentations in advanced cases of bromide intoxication.

TABLE 3

SUMMARY OF DATA CONCERNING BROMIDE INTOXICATION
UNIVERSITY HOSPITALS, IOWA CITY, 1945-1960

Case Number	Symptoms Related to Bromide Intoxication	Duration in Hospital	Source of Bromides	Treatment
1	Toxic Psychosis	40 Days	Salty liquid "Nerve Tonic"	DOCA
2	Ataxia, Confusion	6 Days	Rx—Bromides	.....
3	Ataxia, Confusion, Toxic Psychosis	3 Days	??	.....
4	Drowsiness, Toxic Psychosis	34 Days	Rx—Bromides	Sodium Chloride and Fluids
5	Rash, Dysarthria	12 Days	Rx—Bromides	Sodium Chloride and Fluids
6	Ataxia	9 Days	Rx—Bromides	Sodium Chloride and Fluids
7	Anxiety	9 Days	Bromo-Seltzer	.....
8	Depression and Rash	19 Days	Bromo-Seltzer	Sodium Chloride and Fluids
9	Ataxia	6 days	Bromo-Seltzer	.....
10	Mental Dullness	15 Days	Rx—Bromides and Bromo-Seltzer	Sodium Chloride and Fluids
11	Ataxia and Mental Deficiency	15 Days	Miles Nervine	Sodium Chloride, Niacinamide
12	Mental Disturbances	58 Days	Miles Nervine	Sodium Chloride and Fluids
13	Psychosis	41 Days	Rx—Bromides	Sodium Chloride and Fluids
14	Coma	39 Days	??	Sodium Chloride, Fluids, Ammonium Chloride
15	Ataxia, Dysarthria, Disturbed Mentation	4 Days	Salty Tablets ??	Ammonium Chloride
16	Rash, Personality Changes	15 Days	Rx—Bromides	.....
17	Anxiety	15 Days	Abbott's "Five Bromides"	.....
18	Anxiety	1 Day	Rx—Bromides	.....
19	Depression	5 Days	Rx—Bromides	Sodium Chloride
20	Coma	12 Days	??	Sodium Chloride
21	Psychoneurosis	53 Days	??	.....
22	Psychosis	8 Days	Bromo-Seltzer and Nervine	Sodium Chloride, Ammonium Chloride
23	Depression	6 Days	Nervine	.....
24	Mental Confusion	37 Days	Nervine	Sodium Chloride

The longest time spent in the hospital was 58 days. Sodium chloride and fluids were usually employed in therapy. Bromo-Seltzer and Miles Nervine had been used by nine patients and were thought to have been responsible for the intoxication. Bromides had been obtained by prescription in eight cases.

D. Neurological. Mental disturbances are common. Irritability, disorientation, delirium, delusions and hallucinations are usual symptoms. The toxic effects of bromism are frequently confused with general paresis, multiple sclerosis, encephalitis, uremia, brain tumor, alcoholism, cerebral arteriosclerosis, and senile and presenile dementia.

Localizing central nervous system signs, such as tremor, dysarthria, incoordination, and changes in the reflexes and the Babinski sign, have been reported.

The electroencephalogram reveals a diffuse, slow record; with partial recovery, mixed fast and slow activity is seen. At low bromide levels, fast activity has been reported.[6]

2. *Differential Diagnosis.* One cannot overemphasize the comment made by Goodman and Gilman: "In the diagnosis of any bizarre nervous or mental disease, the physician should be suspicious that drug intoxication may exist, and bromide should be placed high in the list of possibilities."[5]

There are few illnesses more subtle and insidious in their presentation than bromide intoxication. If bromism is not thought of early in the evaluation of the patient, it is likely to remain undiagnosed. The commonest symptoms of bromism are mental disturbance and deterioration, generalized ataxia and malaise. This combination often causes the examiner to consider the diagnosis of disseminated carcinomatosis, or in the elderly patient, senile dementia. Diffuse cerebrovascular disease, general paresis and brain tumor are often suspected in patients who are intoxicated with bromides. The confusional states associated with bromism have, in the past, caused a number of patients to be admitted to mental hospitals.

TABLE 4

SUMMARY OF DATA CONCERNING BROMIDE INTOXICATION UNIVERSITY HOSPITALS, IOWA CITY, 1945-1960

Case Number	Electroencephalographic Findings
13	Generalized 5-7/sec. and 2-4/sec. activity. No focal signs apparent. Impression: Very abnormal type slow 2. Compatible with epilepsy but not distinguishable from organic brain disease by EEG. (EEG was done 1 month prior to the recording of a serum bromide level of 150 mgm.)
23	8/sec. occipital alpha noted. Anterior 18/sec. beta activity was present. Some dubiously reliable left temporal area slow activity noted. Impression: Probably within normal limits. (EEG was done 2 days after the serum bromide level was noted to be 448 mg. per cent.)
24	Some 8/sec. low and occasional medium voltage occipital alpha present. Generally this was a low voltage slow record without focal features. This type of record is consistent with a diagnosis of bromide intoxication. (EEG was done 6 days before a serum bromide of 271 mg. per cent was recorded.)

Four electroencephalograms were done in the entire series. (Three are reported in the above table, and one in the detailed report of Case 2 in the text of this paper.) Two records were diffusely slow, suggestive of the possibility of bromide intoxication.

There is only one certain way of making the diagnosis. It is to keep the condition in mind and to perform a serum sodium bromide determination on any patient who has the signs of drug toxicity or an ill-defined syndrome of generalized illness.

It is important to investigate drug ingestion. Every patient should be questioned concerning the drugs he may have taken. Surprisingly, the majority of bromide-intoxicated patients will give histories of taking the drug either as a patent medicine or on a physician's prescription.

Headache and generalized malaise are common symptoms in neurosis, and are frequently self-treated by means of commercial preparations containing bromides. In the present series of 24 patients, there were 10 individuals who had obtained bromides without prescription, and eight who had been given prescriptions for the drug.

3. *Treatment of Bromide Intoxication.* Wuth,[7] in 1927, alerted the medical profession in the United States to the frequency of bromide intoxication. He devised a simple colorimetric test for determining serum bromide levels. He recommended sodium chloride as definitive treatment. Four to eight grams of sodium chloride orally or parenterally per day, with adequate fluids, was recommended.

TABLE 5

SUMMARY OF DATA CONCERNING BROMIDE INTOXICATION UNIVERSITY HOSPITALS, IOWA CITY, 1945-1960

Case Number	Chemical Determinations of Cerebrospinal Fluid		
2	Protein 60 mg.		
6	Protein 62 mg.	Chloride 730 mg.	Sugar 60 mg.
9	Protein 37 mg.	Chloride 750 mg.	Sugar 70 mg.
10	Protein 84 mg.	Chloride 775 mg.	Sugar 47 mg.
11	Protein 44 mg.	Chloride 730 mg.	
12	Protein 56 mg.	Chloride 707 mg.	Sugar 66 mg.
13	Protein 23 mg.	Chloride 794 mg.	Sugar 67 mg.
14	Protein 84 mg.	Chloride 714 mg.	Sugar 60 mg.
15	Protein 84 mg.	Chloride 714 mg.	Sugar 60 mg.
16	Protein 43 mg.	Chloride 737 mg.	Sugar 60 mg.
23	Protein 100 mg.		
24	Protein 92 mg.	Chloride 668 mg.	

Lumbar punctures were done in 12 patients. The protein was above normal (50 mg. per cent) in eight patients. The cerebrospinal chloride and glucose values were normal.

Normal Values

Protein	10- 50 mg. %
Chloride	700-750 mg. %
Glucose	50- 85 mg. %

Since then, other measures have been recommended:

A. Ammonium chloride[8]
B. Mercurial diuretics[9]
C. Hemodyalysis with an artificial kidney[10]
D. Increased fluid intake
E. Adrenal cortical extract and DOCA[11]
F. Niacinamide[12]

More recently, Hussar and Holley[13] have recommended that ammonium chloride be combined with mercurial diuretics as the most effective method of treating bromide intoxication. An injection of 2 cc. of Mercuhydrin every second or third day is recommended, along with ammonium chloride, 6 Gm. per day in divided doses.

SUMMARY

1. A survey of bromide-intoxication patients has been presented. The period studied was 1945-1960, and 24 ward and 3 private patients were reviewed.

2. The diagnosis and management of bromism have been reviewed.

3. Intoxication with bromides is not uncommon, and deserves consideration in any patient who presents symptoms suggestive of drug intoxication.

4. Patent medicines—i.e., Bromo-Seltzer and Miles Nervine—are common sources of bromides in patients with bromism. It would seem that the regulations designed to protect the public against such materials are in need of review.

5. The bromides involved in these cases of intoxication had often been obtained by means of physicians' prescriptions. It is the responsibility of the physician to follow the patient closely for drug intoxication. Any patient on prolonged bromide therapy requires periodic serum bromide determinations.

6. Bromide intoxication is often associated with serious underlying psychiatric illness.

ACKNOWLEDGEMENTS

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Bacterial and Viral Diseases of Man And Their Treatment

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IOWA CITY

A REVIEW OF THE common infectious diseases of man, and of their treatment, is timely for two reasons. First, many new terms have been introduced into the science, and they are unknown to physicians who graduated more than five or 10 years ago. Second, after a period of great success lasting approximately from 1944 to 1950, antibiotics have been less effective in the treatment of certain infections during the last 10 years.

THE PREVALENCE OF DISEASE

In a recent survey of 1,000 consecutive home visits to acutely ill medical patients, 14 entities were found to have been responsible for 66.4 per cent of the calls. Many of the diagnoses were of infectious diseases (Table 1). The study was made in the town of Decatur, Illinois, which has a population of 70,000.

TABLE I

ONE THOUSAND CONSECUTIVE VISITS TO ACUTELY ILL MEDICAL PATIENTS

(Couter et al., 1953)

Influenza	148	Bronchitis	25
Follicular tonsillitis	84	Acute back pain	23
Nasopharyngitis	79	Urinary tract infection	23
Pneumonia	70	Coronary artery disease	22
Gastroenteritis	67	Cholecystitis	20
Anxiety state	51	Cerebrovascular accident	15
Cardiac failure	36	Bronchial asthma	15

The table lists the most common conditions, with the infections underlined.

USE OF AN INDICATOR PATIENT

Most outbreaks of infection are spread over days, weeks or months. The first patient you see with a syndrome suggestive of an infection should be studied with great care. A fund for such investigations might well be considered to be a running expense of your practice. In many outbreaks, subsequent cases can then be recognized without much additional expense.

VIRUS DISEASES

The numbers of human viruses that have been recognized and characterized are increasing year-

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ly. The ones presently named are summarized in Table 2. Of the total of over 150 different viruses that have been recovered from human beings, only about 40 were known before 1945. A virus disease can be diagnosed on the basis of a febrile illness, usually not associated with leukocytosis or pus formation, and sometimes recognizable by its clinical picture. When possible, bacterial disease should have been excluded by appropriate cultures. A confirmation of the diagnosis can be made by tissue culture, by animal inoculation, by serological technics or by all three methods.

When viruses are grown in living cells, their presence will become obvious by some change that has taken place in the cellular relationships, in the cytoplasmic structure or in the nuclear appearance. In certain virus infections of tissue cultures, this appearance is characteristic. The change in the normal morphology of cells is called a cyto-

TABLE 2

THE VIRUSES CAUSING DISEASE IN MAN

Respiratory Viruses	Arbor Viruses
Adenovirus types 1-20	Groups A, B, C and miscellaneous (see Fig. 4)
Common cold	Herpes
Myxoviruses (affinity for mucus)	Herpes simplex
Influenza A, A′, B, C and D	Varicella Herpes zoster
Mumps	Other Viruses
Parainfluenza types 1, 2 and 3	Eaton agent
	Hepatitis
Enteroviruses	LCM
Coxsackie A 1-19, B 1-5	Measles
Echo types 1-9 and 11-27+	Newcastle
Polioviruses types 1, 2 and 3	Rabies
	Rubella
	Smallpox
Reoviruses	Trachoma
Types 1, 2 and 3	Vaccinia

pathogenic effect. Further identification of the virus depends on the use of specific antisera.

The Adenovirus Infections. Although adenovirus diseases are uncommon in the general civilian population, they are a common cause of the acute respiratory illness of young recruits in military service. Nonetheless, asymptomatic infections commonly occur in the younger age groups. Some confusion in this area is inevitable, for the adenoviruses have been called by many names, including AD, APC, ARD, R167 and others. The name *adenovirus* was adopted in 1956. These viruses infect the lung, the upper respiratory tract, the eye, and the lymph nodes associated with these tissues. They were originally isolated from tissue cultures of human adenoids (Figure 1).

The three main disease groups caused by these viruses are pharyngoconjunctival fever, "acute

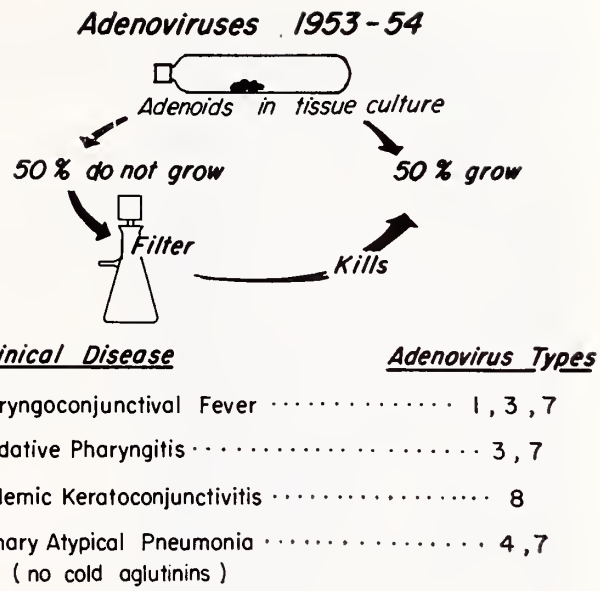


Figure 1.

undifferentiated respiratory disease" and keratoconjunctivitis. In pharyngoconjunctival fever, the patient usually presents with a sore throat, headache and myalgia. There may also be conjunctivitis, which is frequently unilateral. There may be abdominal symptoms such as diarrhea. On looking at the throat, one notes redness and a few patches of white exudate. The conjunctivitis is characterized by an enlargement of the follicles, and occasionally a little bit of exudate is seen. The patient usually has a fever of between 101° and 103°F. for about four days. "Acute undifferentiated respiratory disease" is characterized by a sore throat, with cough and hoarseness and a generalized sensation of coldness. Quite a number of these patients have elevated white-cell counts. The temperature is elevated for about four days, and averages 100° F. Keratoconjunctivitis is a relatively uncommon form of infection in this country. Occasionally, however, instruments or solutions in eye clinics may become contaminated with the virus and may cause an explosive outbreak of infection.

For this group of diseases, effective vaccines are available. It is doubtful, however, that they have much importance in the treatment of the civilian population.

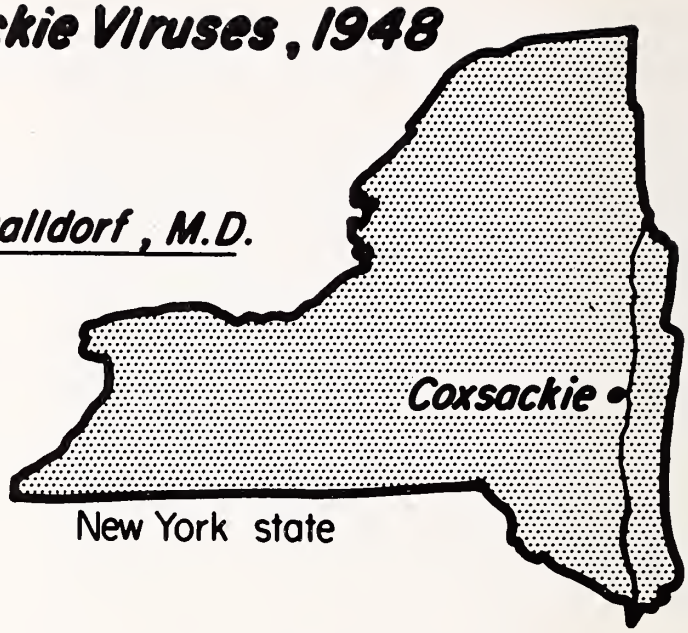
The influenza virus and mumps are well described in current textbooks, and consequently they will not be discussed here.

The parainfluenzal viruses are also called hemadsorption viruses (because red cells will adhere to virus-infected tissue culture cells) and croup-associated viruses. They have been isolated from patients with pneumonia, croup, bronchiolitis, pharyngitis, rhinorrhea or mild respiratory disease.

The common-cold virus. In the past, a number of agents have been isolated from the noses and

Coxsackie Viruses, 1948

Gilbert Dalldorf, M.D.



	MICE < 12 days old	Summer Diseases of MAN
Group A	Skeletal Muscle (flaccid paralysis)	Herpangina Summer Grippe Aseptic Meningitis
Group B	Fat Pad and Brain (spasticity and ataxia)	Pleurodynia Myocarditis Minor Febrile Illness Aseptic Meningitis

Figure 2.

ECHO VIRUSES 1951-53

Enteric · · · · · · · · · ·

Cytopathogenic · · · ·

Human · · · · (ECBO = Bovine, etc.)

Orphan

Summer Diseases

Aseptic Meningitis

Minor Febrile Diseases

Summer Rash (e.g. Boston Exanthem)

Diarrhea

Acute Respiratory Disease

Mild Paralysis

Figure 3.

throats of patients with colds. Recently, Tyrrell has isolated new agents, has devised methods for their detection, and has hopes of making vaccines.

Coxsackie Virus Infections. When investigating an outbreak of poliomyelitis in 1948, Dalldorf discovered a new agent by the use of a new method, namely the injection of very young mice. There are now two groups of these viruses which are differentiated either by their effect on mice or on man, as shown in Figure 2. The main type of illness in the group A infections is a generalized aching, with headache and sore throat. The sore throat is of a particular type, showing small vesicles in the pharynx, called herpangina. This is differentiated from the usual type of herpes simplex infection by its seasonal occurrence, its limitation to the posterior oral cavity, and the smallness of the vesicles. The group B types of infection are mainly associated with pleurodynia, a severe pain in the diaphragm region which was first described in cases on the island of Bornholm, near Denmark. This is sometimes associated with aseptic meningitis, and less often with an acute myocarditis that may be fatal. An outbreak in Iowa in 1955 has been described in this JOURNAL.

This is a community illness, and it particularly affects whole families. Three to five per cent of normal individuals may be carriers of this virus, probably as a result of recent infection. In endeavoring to make a diagnosis, it is worth noting that 75 per cent of people with the infection have white cell counts of less than 15,000.

ECHO Virus Infections. The name *ECHO* consists of the initial letters in the names of viruses associated with the enteric tract recovered from human beings, and producing a cytopathogenic effect on tissue culture (Figure 3). Initially, these viruses were thought to be unrelated to disease, and were therefore called "orphans." ECHO virus infection can be considered the cause of some of the summer diseases associated with aseptic meningitis, fever, rash, diarrhea and respiratory symptoms, particularly when several of these occur in combination. The respiratory disease is usually accompanied by redness of the pharynx and tympanic membranes, and with cold-like symptoms. Large cervical lymph nodes may be found, and diarrhea is frequent. The usual types associated with upper-respiratory infection are types 8, 10 and 20. Summer diarrhea in infants is frequently related to ECHO infection, and it may occur as an outbreak in a family or in a community. There appears to be a relationship to the social class of the individual, and like other enteric diseases, it is found in the low-income group. ECHO virus infection is one of the causes of the aseptic meningitis syndrome, often with a rash. Types 2, 4, 5, 6, 9 and 14 commonly cause this syndrome. An unusual type of ECHO virus disease called *Boston exanthem* is a combination of rash and enanthem, mild sore throat, frequently abdominal pain, and occasionally diarrhea. This is due to type 16 ECHO virus. The white cell count in ECHO infections usually is less than 15,000, and there is a predominance of lymphocytes.

The poliovirus infections have been the subject of many recent articles, and thus they will not be discussed here.

The Reovirus group of infections involve both the respiratory and the enteric tracts, and the first two letters in the name are derived from this association. These viruses are relatively large (about 75 mμ). They produce characteristic cytoplasmic inclusions in monkey kidney tissue, are ether resistant, multiply in newborn mice, and have a common complement-fixing antigen. They cause diarrhea and febrile upper-respiratory infections in children.

The Arborviruses (Figure 4). The name of this group is a contraction of "arthropod-borne viruses." The arthropods are a group of articulated animals with jointed limbs, and they include the insects, spiders, ticks, crustaceans, etc. In the area of our discussion, the name refers mainly to mosquitoes and ticks. As will be seen in Figure 5, the population of Iowa is susceptible to an infection with *western and St. Louis encephalitis.* The eastern virus does not affect us, for it is borne by saltwater mosquitoes. The complexity of the infective cycle of this type of virus is shown best by Figure 6, which illustrates the transmission cycle of western equine encephalitis. *Dengue fever* belongs to this group of viruses, and certain of the Iowa population may encounter this disease on visits to Florida. The disease complex consists of marked prostration, generalized lymphadenopathy and leukopenia. A maculo-papular rash may also be found. A double-peak type of fever and a relative bradycardia can usually be found. In the same category of disease, which may be diagnosed in returning travelers, is an entity called *Colorado tick fever.* This disease is a flu-like illness with headache, muscular aches and pain, anorexia and a chilly sensation. It has been well described by one of our University Hospitals residents (Drevets, 1957). It seems possible that this disease might be found in Iowa, for Montana ticks were introduced to the Tama Reservation along with a gift of horses. This explains the occurrence of Rocky Mountain spotted fever in this area.

THE DIAGNOSIS OF VIRUS INFECTIONS

The organization, function and results of relatively simple virus diagnostic laboratories have been discussed in recent articles. In those papers, the tissue culture, animal inoculation and serological identifications of viruses are discussed. These facilities are unfortunately not generally available to Iowa physicians. In addition, fluorescent antibody technics and Papanicolaou stained sputum smears for ciliocytophoria may aid in making a diagnosis of viral infection.

Fluorescent Antibody Technics. These are presently available in Iowa for the diagnosis of group A streptococcal infections, brucellosis and rabies, at the State Hygienic Laboratories, Iowa City.

ARBOR VIRUSES

(ARthropod BORne viruses)

GROUP A

- Eastern
- Western
- Venezuelan
- South African
- Malayan

} Encephalitis

GROUP B

- Yellow Fever
- St. Louis
- Japanese B.
- Murray Valley

} Encephalitis

- Russian Tick-borne Complex

GROUP C

- Ill-defined South American Viruses

MISCELLANEOUS

- Sandfly
- Domestic Animal Epizootics

Figure 4.

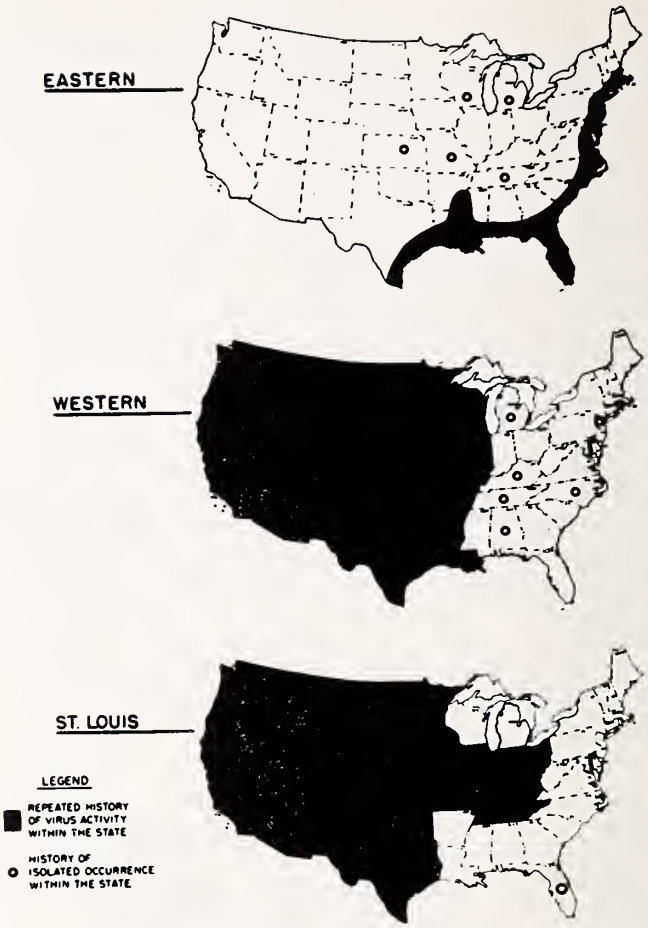


Figure 5. The population of Iowa is shown to be suceptible to western and St. Louis, but not to eastern, encephalitis.

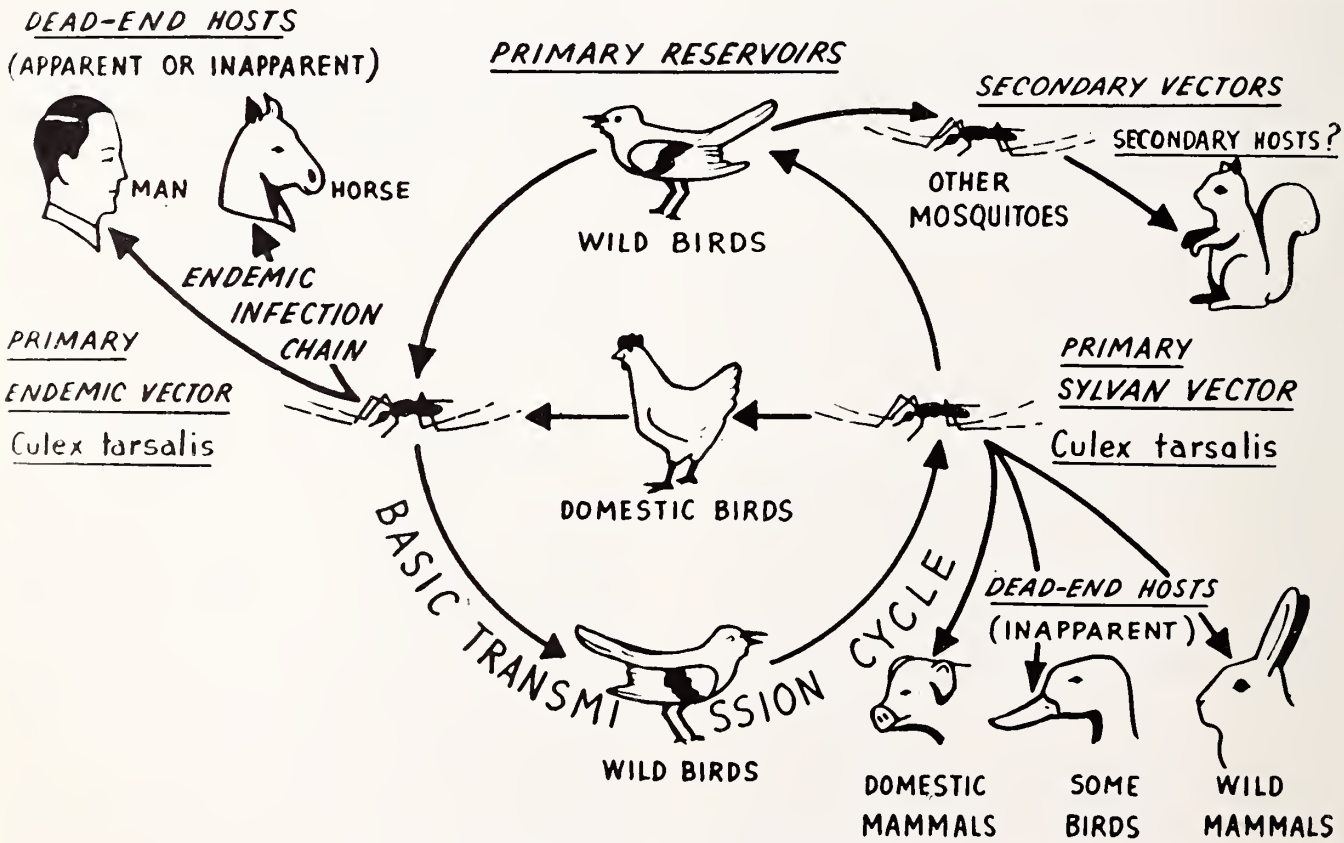


Figure 6. The infective cycle of encephalitis is complex.

They may soon be available, also, for the diagnosis of pathogenic E. coli and syphilis. In the not too distant future, this may be a rapid, accurate method for the diagnosis of many other infections.

Ciliocytophoria. Inclusion bodies and a characteristic deformity and "pinching-off" of the ciliary tuft of the respiratory epithelium have been described in the sputum of patients with viral respiratory infections. This phenomenon may, at a later date, prove useful in the presumptive diagnosis of virus diseases.

THE PREVENTION AND TREATMENT OF VIRUS DISEASES

Killed-virus *vaccines* are available for rabies, influenza, encephalitides, poliomyelitis, adenovirus infection, mumps and measles. Live virus vaccines are available for smallpox, yellow fever, rabies, poliomyelitis and measles. Of this group of vaccines, those most useful in civilian practice are those for smallpox, poliomyelitis, and in certain selected patients, influenza.

Various chemicals are now available that hold promise for the future in the treatment of viral diseases. Certain derivatives of *benzimalodines* show encouraging possibilities, in the test tube, for antiviral effect. A *thiosemicarbazene* has been effective in the treatment of infant mice infected intracerebrally with smallpox. *Interferon* was discovered by Isaacs in 1957. This substance is elaborated by virus-infected cells, and will interfere with the growth of other viruses. It has many of the properties of a wide-spectrum viral antibiotic, and is presently in large-scale production in Britain for experimental and clinical use. *Helanine,* discovered by Shope, an Iowa graduate, is a penicillium antibiotic effective against influenza and encephalomyocarditis viruses in mice.

THE RECOGNITION OF BACTERIAL DISEASE

Certain bacterial diseases are common. These are staphycococcal infections, pyelonephritis, streptococcal pharyngitis, pneumococcal pneumonia, shigella and salmonella infections, tuberculosis and gonococcal infections. Other bacterial infections are uncommon, but important. These are syphilis, meningococcemia, the pyogenic meningitides, erysipelas, rheumatic fever and brucellosis. All of these diseases and their treatments are well described in the current textbooks.

Shaking chills at the onset of illness suggest pneumococcal pneumonia, influenza, erysipelas, osteomyelitis, puerperal sepsis, pyelonephritis or acute hemolysis. Continued chills suggest septicemia, a deep abscess, phlebitis in the brain or abdomen, brucellosis, malaria or empyema.

In a few bacterial infections, an etiologic diagnosis can be made from the *clinical appearance.* This is the case in diseases such as erysipelas or, with a little assistance from a gram stain smear, in gonorrhea. In other cases such as a streptococcal sore throat, the syndrome of follicular tonsilitis, with painful dysphagia and tender tonsillar glands, a temperature of 102° to 105° F. and a leukocytosis, is strongly suggestive of streptococcal sore throat. A culture will confirm the diagnosis. Such cultures can be made conveniently on media supplied ready-to-use in disposable Petri dishes at a modest cost. The same can be said of the syndrome of the patient who was well the day before and wakes up in the middle of the night with a sharp pleuritic pain, coughing up bloody or rusty sputum, and with rales present in his chest. His illness should turn out to be pneumococcal pneumonia.

In a like manner, there are some *bacterial probabilities* that should be learned. In the urinary infections in young or pregnant patients, *Escherichia Coli* is common. In old men *Staphylococcus aureus* is more usual. In otitis media, the organisms infecting the ear pass from the pharynx through the eustachian tube to the ear, and therefore are usually pneumococci, beta hemolytic streptococci, staphylococci or Hemophilus influenzae. In contrast, external otitis or chronic otitis media frequently can result from the patient's having successively explored the anus and the ear. The bowel organisms sometimes found in the ear include proteus, pseudomonas (pyocyanea) and staphylococcus. The presence of blue-green pus suggests an infection with pseudomonas (pyocyanea). Many other bacterial probabilities can be learned by the astute use of one's clinical judgment, confirmed by suitable cultures.

THE USE OF CULTURES AND SENSITIVITIES IN THE CARE OF THE INFECTED PATIENT

In a few cases, such as erysipelas, a culture is superfluous. In many cases, a confirmatory culture is of value but perhaps not essential. However, in certain cases a culture is imperative. It should be remembered that at the present rate of charges, a culture and sensitivities will cost approximately half as much as room rent for one day in the hospital. In addition, it should be remembered that a course of antibiotics is expensive, as is shown in Table 3.

TABLE 3

AVERAGE HOSPITAL COST OF ONE WEEK'S TREATMENT WITH THE COMMON ANTI-INFECTION AGENTS

Sulfa, 1 Gm., q.4.h. p.o.	$ 5.04
Mandelamine, 12 Gm./day	17.50
*Procaine penicillin, 600,000 u., IM/day	22.75
*Streptomycin, 0.5 Gm., IM, b.i.d.	35.00
**Tetracycline, 0.5 Gm., q.i.d., p.o.	28.00
**Chloramphenicol, 0.5 Gm., q.i.d., p.o.	33.60
**Erythromycin, 0.5 Gm., q.i.d., p.o.	30.80
**Novobiocin, 0.5 Gm., q.i.d., p.o.	39.20
Nitrofurantoin, 50 mg., q.i.d., p.o.	16.80
Polymyxin, 50 mg., t.i.d., IM	84.00
Vancomycin, 0.5 Gm., b.i.d., IV	91.00
Sod. Methicillin, 1 Gm., IM, q.4.h.	201.60

* Wide variations.
** In many situations, half this dose is used.

RULES FOR ANTIBIOTIC TREATMENT

1. *Antibiotics should be used only when clearly indicated,* for example where the bacteriological diagnosis is known, or in the presence of a disease of probable bacterial nature where the white cell count is greater than 15,000 and where suitable cultures have been taken. Alternatively, antibiotics may be used in the prophylaxis of a disease where the antibiotic is known to be 95 per cent or more effective—e.g., in rheumatic fever, gonorrhea, etc.

2. *Bactericidal antibiotics are much to be preferred over bacteriostatic antibiotics.* Penicillin, streptomycin, probably erythromycin in high dosage, Bacitracin, Vancomycin, Furadantin and neomycin are all bactericidal. The other drugs are bacteriostatic.

3. *A full dose of antibiotic should be used for an adequate period.* For example, relapse from streptococcal sore throat is common unless 10 days of coverage with penicillin has been given.

4. *The pinpointed attack with a narrow-spectrum drug is much better than the use of a wide-spectrum antibiotic or combination of antibiotics.*

5. Treat empirically to begin with, but if more than a trivial infection is present, the nature of the infecting agent and its sensitivities should be discovered by means of *in-vitro* tests.

6. Any localized pus should be drained, for antibiotic enters such an area poorly, and the likelihood is that the death of the patient is probably related to the total number of bacteria present in the body. This rapid removal of organisms is beneficial to the patient.

7. Remember that a temperature falls like a bouncing ball. Don't be discouraged by an afternoon rise in temperature if the patient feels better. Don't try to change the previously-decided treatment regimen.

THE USE OF ANTIBIOTICS IN PROPHYLAXIS

If one is trying to prevent a specific infection by means of an antibiotic that is effective on 95 per cent or more of occasions against the expected organism, one can anticipate success. Take, for example, the prevention of streptococcal sore throat, in patients with rheumatic heart disease, or the prevention of gonorrhea, meningococcal infection, or shigella dysentery. *Other types of chemoprophylaxis are rarely justified.* There are now more than 35 studies in the literature indicating that in a patient with no bacterial infection, the use of antibiotics as an umbrella type of protection will result in a greater number of infections than will occur in patients with the same disease and without antibiotic treatment.

The Length of Treatment With Antibiotics. In most simple infections, it is adequate to treat the patient for 72 hours after the disappearance of fever, or after the last clinical evidence of the infected state. In patients with septicemia, a minimum of four weeks of treatment is recommended, and in bacterial endocarditis, six weeks of treatment is the standard course. Many people now accept six weeks of treatment for pyelonephritis as a minimum length of course.

THE ROUTES OF ADMINISTRATION OF ANTIBIOTICS

It is profitable to remember that when trying to sensitize a guinea pig in the laboratory, one finds it very hard to do the task by oral medication, and it is usual to give the drug or chemical by injection. By analogy, it is probable that oral penicillin will seldom lead to the development of sensitization. However, once the patient has been sensitized by the parenteral route, anaphylactic shock can be triggered by penicillin given by any route—i.e., by inunction, by throat lozenge or by any other method of administration.

REACTIONS TO ANTIBIOTICS

Anaphylactic reactions to penicillin should be treated with adrenalin, 0.3 cc., given subcutaneously in the arm opposite to that in which the drug has been given. A tourniquet is placed on the arm or leg above the site of injection. The adrenalin may be repeated in 15-20 minutes, if unsuccessful the first time. The serum-sickness part of anaphylaxis which follows the acute reaction may be treated with antihistamine or cortisone, but these agents are too slow-acting for use in combating the acute reaction. Serum sickness and urticarial-type reactions occurring alone are best treated with an antihistaminic such as chlortrimeton, 8 mg., by mouth every four hours. For serious reactions that do not respond well to antihistamines, cortisone or Meticorten may be used. Some people have used penicillinase (1 ml. by deep intramuscular injection), but as this takes 24 hours to work, it is applicable only to the treatment of the delayed reactions. If a recurrence of the signs or symptoms occurs, the dose can be repeated in 4-7 days. A procaine reaction should not be confused with an anaphylactic reaction to penicillin. In anaphylaxis, the patient complains of tingling in the fingers, in the toes, and around the mouth, and of perineal and palmar itching. At the same time, the patient has difficulty breathing, and wheezes can be heard in the chest. In contrast, if more than 8 mg. per minute of procaine is accidentally injected intravenously, it will produce flushing, dizziness and generalized numbness. Each 600,000 units of procaine penicillin contains 240 mg. of procaine.

THE FIRST APPROACH TO THE USE OF ANTIBIOTICS

It should be recalled that *penicillin* is usually effective in infections with pneumococci, gonococci, *beta* hemolytic streptococci and spirochetes. In these infections, this drug is the first choice. In the presence of a probable *gram-negative bacillary infection,* it is suggested that tetracycline, streptomycin, the sulfonamides, chloramphenicol or kana-

mycin might be used. The antibiotics to use in staphylococcal infections are shown in Table 4. In the presence of *tuberculosis,* the general guiding rule is that any two antituberculosis drugs are indicated as long as one of them is isoniazid. Isoniazid and streptomycin constitute the preferred regimen, for this combination is most acceptable to the patients, although statistically, isoniazid and PAS constitute a slightly better regimen. Other drugs which can be used for the treatment of tuberculosis are pyrazinamide, cycloserine, the tetracyclines or neomycin.

TABLE 4

ANTIBIOTIC SENSITIVITIES

Antibiotics Active Against Staphylococci in Order of Preference If Strain Is Sensitive

Many strains outside hospital are sensitive	Penicillin Streptomycin Erythromycin
	Novobiocin (Albamycin, Cathomycin, Cardelomycin)
Reserve for serious infections	Sod. Methicillin (Staphcillin) (IM or IV only) Vancomycin (Vancocin) (IV only) Chloramphenicol Kanamycin (IM only) Ristocetin (Spontin) (IV only)
	Tetracyclines
Locally	Bacitracin Neomycin Tyrothricin

SENSITIVITIES OF "HOSPITAL STAPHYLOCOCCI" TO COMMONLY USED ANTIBIOTICS

S = Sensitive R = Resistant

Penicillin	R	Erythromycin	S or R
Streptomycin	R	Novobiocin	S
Tetracycline	R	Chloromycetin	S

SENSITIVITIES OF "STREET STAPHYLOCOCCI"

Penicillin	S or R	Erythromycin	S
Streptomycin	S	Novobiocin	S
Tetracycline	S	Chloromycetin	S

THE USE OF COMBINATIONS OF ANTIBIOTICS

Combinations can be recommended only to delay the emergence of resistance, for example in the treatment of tuberculosis. For a synergistic effect in the treatment of Streptococcus fecalis endocarditis, penicillin and streptomycin can be used. For the emergency treatment of a seriously ill patient while one is awaiting the results of a culture, for infections due to more than one organism, and possibly for some carefully selected diseases such as serious illnesses resulting from gram-negative bacilli, one can use combinations of antibiotics.

NON-ANTIBIOTIC TREATMENT FOR INFECTIOUS DISEASES

Bed rest has been useful in patients with severe constitutional reactions. In prolonged and difficult infections, however, bed rest may be harmful and may produce such undesirable effects as pulmonary emboli, osteoporosis and kidney stones. In tuberculosis, for example, the correct use of chemotherapy is much more essential than is bed rest. In the treatment of fever, *aspirin* can be useful in reducing fever in children. It should be remembered, however, that the use of aspirin will interfere with the proper establishment of a diagnosis. In addition, aspirin may convert a relatively comfortable, constant fever to a period of alternating fevers and chills that is quite unpleasant. Occasionally, aspirin will cause complications from bleeding. It is possible that fevers in adults under 105° F. are beneficial to the infected patient, first, by certain non-specific mechanisms in the combatting of the disease, ones as yet not fully understood, and second by enhancing the effects of antibiotics. Fevers over 105° F. can be treated with cold sponging.

CORTISONE

No obvious benefits have been discovered in any of the carefully planned studies where alternate patients have been given cortisone in addition to antibiotics. In septicemia, no change in the immediate or ultimate mortality has been shown. In meningitis due to Hemophilus influenzae, subdural effusions and other complications occur in patients who have been given cortisone in addition to the usual antibiotic therapy. Similarly, more complications occur in the pneumococcal meningitis patients treated with cortisone in addition to antibiotics, than in patients treated with antibiotics alone. In mumps orchitis, there was less pain when the patients were treated with cortisone, but the price paid in complications was too high. In contrast, cortisone may be beneficial where the consequences of inflammatory swelling might be lethal. Such is true in tuberculous meningitis, and there may be a place for the drug in the treatment of moribund tuberculosis patients. However, one must remember that death has been caused by cortisone in uncomplicated chicken pox, and that in certain other conditions where the chemotherapy has been inadequate, cortisone treatment has led to fatal complicating septicemia.

SHOCK DUE TO INFECTIONS

Infection may be very difficult to recognize in seriously ill patients, for shock will lead to an absence of fever. It should be remembered that a patient who is confused may be developing shock from infection. Basically, the best treatment for

shock is to make an etiologic diagnosis and to institute high dosage, accurate treatment with antibiotics. However, this treatment cannot be delayed until all the results from cultures have been returned. It should be delayed merely until suitable specimens have been taken. In addition noradrenalin, 4 cc. of 1/1,000 dilution per 500 cc. of intravenous fluid, may be necessary to maintain the blood pressure. In a few rare cases a suprarenal hemorrhage may have taken place, and cortisone is indicated in 300 mg. doses. This serious complication may be suggested by a Fantus reaction in the urine of 10 or more grams per liter, confirmed by a later blood-sugar estimation.

GAMMA GLOBULIN IN THE TREATMENT OF INFECTIONS

In experimental infections in mice, benefit has been noted following the introduction of staphylococci, streptococci, Proteus, Pseudomonas, Salmonella, pneumococci and coliform organisms, when gamma globulin has been given in addition to chloramphenicol. It has been found that if the antibody to the specific infection is absorbed out, gamma globulin loses its effect. Some encouraging results have been obtained through the use of 5 cc. of gamma globulin intramuscularly once or twice weekly in human infections such as osteomyelitis, when an appropriate antibiotic is also given.

ACID IN THE TREATMENT OF INFECTIONS

In certain localized infections ¼ per cent acetic acid is very effective. This is particularly true in the presence of Pseudomonas infections, for example, of intravenous cutdowns. A similar use of acid is the employment of mandelic acid in urinary infections. This material should be given in doses of up to 12 Gm. per day until the urine shows a pH of less than 5.5 in tests with nitrazine paper. It is ineffective unless this pH is reached in the urine. This therapy may be useful in some cases of acute urinary infections, and it is useful in persistent chronic infections in selected cases.

SULFONAMIDES IN THE TREATMENT OF INFECTIONS

The sulfonamides are the treatment of choice in meningococcal meningitis and trachoma. They are probably the most useful drugs in the treatment of bacillary dysentery and certain urinary infections. They should be given for at least one week, when a course is begun. Most of them are given in 1 Gm. doses every 4-6 hours, but there are exceptions. Long-acting sulfonamides such as sulfamethoxypyridazine (Kynex) are given in smaller amounts and less frequently. The regimen for Kynex is ½-1 Gm. each morning.

Toxic effects from the sulfonamides are fever, rash, granulopenia, thrombocytopenia, hemolytic anemia, and precipitation in the tubules or lower nephron nephrosis. Precipitation in the kidneys can be minimized through the use of sulfasoxazole (Gantrisin) or through the use of a mixture of three sulfonamides. For general use, triple sulfa, sulfasoxazole or sulfadiazine are recommended. Sulfonamides enter the cerebrospinal fluid well (Figure 7), and are recommended for this purpose. It should be remembered, however, that there is material called paraminobenzoic acid in pus which will specifically neutralize sulfonamide.

PENICILLIN

Several hundred tons of penicillin are prescribed each year in the United States. Approximately 600 cases of anaphylaxis occur yearly, and the number is increasing. This complication has a fatality rate of 10 per cent. It is advisable that the first dose of penicillin in a treatment course for infection should be given in the doctor's office, and that the patient be required to stay in the office for 15 minutes thereafter. A new form of penicillin, sodium methicillin (Staphcillin), has recently become available. This new antibiotic is very useful, but at present it is expensive. Its use should be confined to the treatment of penicillin-G-resistant staphylococcal infections. It is effective, but less so than is penicillin-G, in the treatment of pneumococcal, streptococcal and other infections susceptible to penicillin.

STREPTOMYCIN

Streptomycin is a useful and probably neglected antibiotic. It should not be given in concentrations greater than 0.5 Gm./ml., for it will be more painful than usual. This drug is particularly useful in treating Pseudomonas or Klebsiella infections, tularemia, tuberculosis or plague infections. Unfortunately, resistance to this drug may develop rapidly, especially among the staphylococci. In adults, a 1-2 Gm. and occasionally a 4 Gm. daily total intramuscularly, in divided doses, is recommended. This drug penetrates the cerebrospinal fluid only with difficulty. When one uses it for urinary infections, he should first or simultaneously make the urine alkaline. The toxicity of the drug is evidenced largely by giddiness, but also by tinnitus and deafness. Toxic reactions are more frequent as age advances, but in large part are reversible. They are infrequently seen when a dose of less than 40 Gm. is given.

In contrast, dihydrostreptomycin more often produces a deafness which is largely irreversible. It has been withdrawn from general use.

THE TETRACYCLINES

It probably is not well appreciated that the tetracyclines form unabsorbable compounds with metallic ions. In general, this probably is responsible for the controversy over levels of tetracycline in the blood with different forms of the drug given by

mouth. At one period in the study, calcium diphosphate was used as a capsule filler, thus interfering with the absorption of the drug. At the present time, probably the cheapest form of tetracycline is the one to be recommended, provided that it is made by a reliable firm. This drug is the one which most frequently causes post-antibiotic staphylococcal diarrhea, although this complication also follows the combination of penicillin and streptomycin. Tetracycline should be given in 1-2 Gm. totals daily, in divided doses, by mouth. Antibiotic diarrhea is rarely seen when a total of only 1 Gm. daily is given. This antibiotic penetrates the cerebrospinal fluid if given intravenously.

CHLORAMPHENICOL

There are about 30 Chloromycetin blood dyscrasias known to occur per year in the United States, and the fatality rate is 66 per cent. This unfortunate complication is most common in white females under 12 years of age with histories of frequent illness or of allergies. This side-effect does not contraindicate the use of the drug, but requires that it be used only when definitely indicated. Chloramphenicol penetrates the cerebrospinal fluid very well (Figure 7). It is useful to treat infections due to typhoid and, in some cases of severe antibiotic-resistant staphylococcal disease, infections caused by E. coli and Aerobacter aerogenes and other gram-negative organisms. The dose recommended is 1-2 Gm. daily by mouth, but in certain situations higher doses can be given. This drug is approximately 100 per cent absorbed, so that parenteral doses are very nearly the same as oral doses.

THE ERYTHROMYCIN FAMILY OF DRUGS

In this family, erythromycin is the best drug. The family, however, also includes oleandomycin, carbomycin and spiromycin, and these other antibiotics share the same spectrum and some cross-resistance with erythromycin. Oleandomycin is best reserved for the treatment of erythromycin-resistant infections. The other two drugs are weaker, and are not recommended. Eythromycin is particularly helpful in the treatment of staphylococcal infection, although a certain degree of resistance has developed to it. For adults, it should be given in totals of 1-2 Gm. daily by mouth, in divided doses. Nausea may occur early in the course of treatment, but tends to get less with time. This antibiotic does not enter the cerebrospinal fluid. A new dose form, propionyl erythromycin (Ilosone) gives higher levels in the serum than does the original drug.

VANCOMYCIN

This antibiotic is particularly useful in severe staphylococcal infections. It is bactericidal and is useful in patients already sensitized to penicillin.

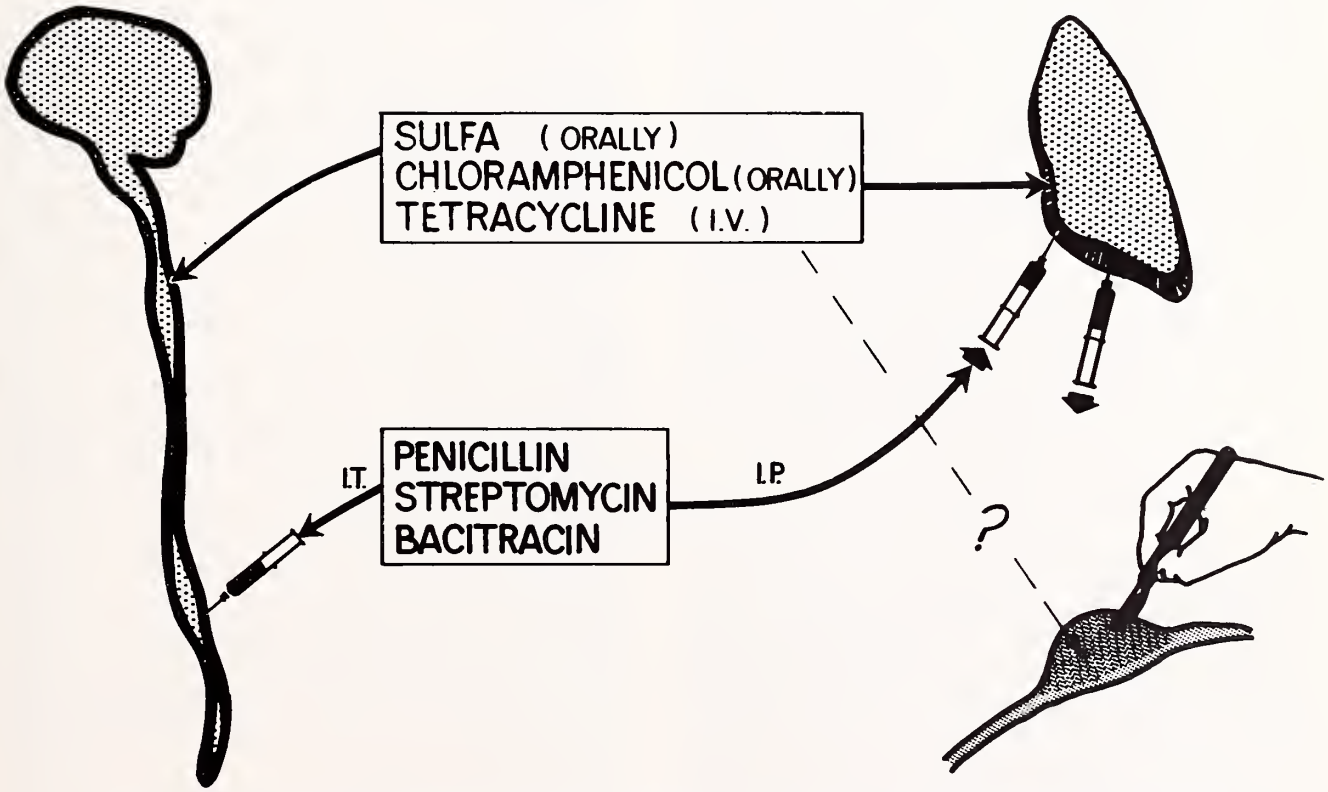


Figure 7. Situations where antibiotic-bacteria contact may be poor, and ways to counteract a dilemma.

BACITRACIN

Bacitracin is most useful as a local application. For example, an ointment with 500 units per gram is useful in the treatment of nasal staphylococcal carriers. It can be given to adults with serious infections in doses of 15,000-20,000 units four times a day, intramuscularly. When it is used in this fashion, careful assessment of the renal function should be carried out at short intervals.

POLYMYXIN

Polymyxin is a useful drug against certain gram-negative organisms, but strains of Proteus are resistant to it. It is given in doses of 0.2 to 0.5 Gm. in 8 or 12 hourly intramuscular doses, and does not enter the cerebrospinal fluid. It causes renal toxicity. It is particularly useful in treating patients with Pseudomonas infections, but patients may complain bitterly of paresthesia in the hands, tongue and circumoral regions, and certain other bizarre side effects.

NEOMYCIN

Neomycin is most useful for local application, such as in a solution of 5 mg./cc. of saline.

NOVOBIOCIN

Novobiocin has a plethora of alternate names, such as albamycin, cathomycin and cardelomycin, and sometimes it is given in double doses by confused physicians who are unaware of the identity of some of these preparations.

Novobiocin is especially useful in treating staphylococcal infections in the hospital. It is also sometimes effective against the Proteus organisms. About 10 per cent or perhaps more of the patients get a morbilliform rash between the seventh and the tenth day of treatment, and they should be warned of this possibility. Patients occasionally get a yellow pigment in the blood and may look jaundiced, but the sclera are free of yellow color. In the presence of either of these two last-mentioned side effects, the drug should be discontinued. Novobiocin, given intravenously, is incompatible with many solutions, and mixes really well only with penicillin and the sulfonamides.

THE NITROFURANS (FURADANTIN AND RELATED DRUGS)

Nitrofurantoin reaches an effective level only in the urine, and should be reserved for the treatment of urinary infections. It is ineffective against Pseudomonas. It is bactericidal against E. coli and Aerobacter aerogenes. It has variable effects against Proteus infections. It is a useful drug in the treatment of urinary infections.

Furadaltalone (Altafur) is bactericidal in the test tube, but bactericidal levels are rarely achieved in the blood. Thus, it has not lived up to the high claims initially made for it, and it is not recommended for the treatment of infections.

PRINCIPLES IN THE TREATMENT OF INFECTIOUS DISEASES

It would probably be well to finish up this brief survey of infectious diseases with certain principles in the treatment of infectious disease:

1. There cannot be ideal treatment without an etiologic diagnosis.
2. Infectious diseases come from contact (family, work or animals).
3. Cultures and sensitivities are as important to your practice as are x-ray and EKG tests.
4. These bacteriologic or virologic tests are only as good as the degree of care that you have taken in the collection of specimens.
5. Antibiotics may be dangerous.

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Systemic Manifestations of Rheumatoid Arthritis (Rheumatoid Disease) Accentuated by Steroid Therapy

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During the past few years, considerable evidence has accumulated showing that rheumatoid arthritis is a generalized connective-tissue disease, rather than merely a local disease of the joints.[24] Systemic manifestations of this disease are being reported with increasing frequency, involving blood vessels, serous membranes, heart, lung, kidney and peripheral nerves.[11, 46, 94] Evidence of systemic involvement can be seen in the serum protein changes and negative calcium balance.[82, 90] Pemberton and Foster, as early as 1920, described the abnormal glucose tolerance found in patients with rheumatoid arthritis.[83] I have been able to substantiate their findings, for I have discovered that the moderately advanced arthritic will exhibit a mild-diabetic tolerance curve after the ingestion of 50 Gm. of glucose.

The subcutaneous nodule in its early phases of development consists mainly of vascular granulation tissue.[98] Systemic granulomatous lesions having a histologic picture similar to that of subcutaneous rheumatoid nodules have been described in splenic capsule, pleura, lung and kidney.[11, 33, 79, 94] Kellgren and Ball have described a fibrinoid necrosis as a primary manifestation of tendon involvement.[62] Granulation tissue forms and undergoes an evolution like that seen in the subcutaneous nodule.[13]

The involvements of the heart can be divided into four groups of pathologic alterations.[97] Pericarditis occurs, rarely, as a frankly granulomatous lesion, but at necropsy as many as 25 per cent of the cases show a fibrous pericardial obliteration. Heart disease morphologically indistinguishable from the rheumatic type is found in association with rheumatoid arthritis at necropsy, with greater frequency than chance would dictate. Granulomatous inflammation similar to that of the subcutaneous nodules have been found in the roots and leaflets of the aortic and mitral valves. The fourth type of lesion found in the heart is an inflammatory reaction in the small branches of the coronary arteries.

Involvement of the vascular system in rheumatoid arthritis was reported long before the advent of steroid therapy.[9, 23, 111] Inflammatory changes in small arteries have been found in 10 per cent of biopsy specimens of striated muscle.[99] The inflammatory exudate is composed of mononuclear cells infiltrating the adventitia, primarily, but the media can be involved to some extent. Necrosis of the wall is minor in extent, and thrombosis is rarely observed. A more severe form of arteritis indistinguishable from polyarteritis nodosa occurs with greater frequency and has a more widespread visceral distribution.

Rheumatoid neuropathy was first described in 1887 in France, and in 1898 in England.[49] Sensory symptoms predominate, and the lower extremities are affected more often than the upper. The inflammatory lesions in the peripheral nerves are similar to those seen in the muscles, and they occur with greater frequency in the large nerve trunks than in the fine ramifications.[41, 87]

Amyloidosis occurs frequently in rheumatoid arthritis. Amyloid deposits are found in the liver, spleen and kidneys, as well as in subcutaneous nodules, synovia and joints.[66, 107] Recovery from secondary amyloidosis is very rare, and only two instances have been reported.[81]

Pulmonary lesions are not uncommon in rheumatoid arthritis, the distinctive pathologic finding being the rheumatoid nodule or granuloma. Pulmonary fibrosis, pneumonitis, pleural effusions and rheumatoid nodules in the lung parenchyma have been reported.[3, 17, 40]

Non-granulomatous lesions of the eye, such as iritis and uveitis and scleral disease (scleritis, scleral nodules and scleromalacia perforans) are not uncommon.[43, 44, 69, 80]

It is important for the physician who treats individuals with rheumatoid arthritis to be cognizant of the visceral manifestations. The mild arthritic without progression of symptoms may never develop visceral lesions of any consequence. The patient, however, who has frequent flares, who develops subcutaneous nodules, who shows early changes in the roentgenogram and who has a positive test for the rheumatoid factor usually has one or many of the visceral lesions. This type of patient may fatigue easily, and fatigue is a symptom

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TABLE 1

PHYSIOLOGIC EFFECTS OF ADRENAL CORTICOSTEROIDS

Mineralcorticoid	Glucocorticoid	Androgen
1. Maintenance of proper concentration of electrolytes (sodium, potassium, chloride) in plasma, interstitial fluids and cells.	1. Increases liver glycogen (glycotrophic by promoting transformation of protein to glucose (gluconeogenesis). 2. Diminished carbohydrate utilization in tissues. 3. Improvement in muscular efficiency.	1. Promotion of protein synthesis (anabolism). 2. Partial support of secondary sex characteristics (pubic and axillary hair).

that is misleading during the course of treatment. The symptoms resulting from the visceral involvement may cause the physician to conclude that the patient either is having an exacerbation of the arthritis or is developing some other disease.

HYPERSTEROIDISM

With the advent of the adrenal cortical steroids, both the clinical picture of rheumatoid arthritis and the treatment of this disease have become extremely complicated. There are three physiologically active elements in the steroids: the electrolyte-regulating hormone, the glucocorticoid hormones and the adrenal androgens. The major specific physiologic effects of each of these hormones are listed in Table 1. These effects occur when the steroids are used in small doses for replacement therapy in cases of adrenal dysfunction. When larger or pharmacologic doses are needed to treat rheumatoid arthritis, the physiologic effects are increased and represent side effects. The changes that occur following pharmacologic doses of the steroids are listed in Table 2.

The electrolyte, glucocorticoid and androgen effects resulting from pharmacologic doses of the steroids have much the same symptomatology as the visceral manifestations of rheumatoid arthritis. It can be readily understood why serious side effects of steroids occur during the treatment of arthritis. Nabarro stated this succinctly: "When large doses of steroids are given for their pharmacological action, the result will be to produce

TABLE 2

PHARMACOLOGIC EFFECTS OF ADRENAL CORTICOSTEROIDS

Mineralcorticoid	Glucocorticoid	Androgen
1. Decreases urinary excretion of sodium (edema, hypertension). 2. Increases urinary excretion of potassium. 3. Increases plasma and extracellular fluid volume (secondary to sodium retention).	**Specific Effects** 1. Increased formation of glucose from protein (gluconeogenesis). 2. Counteracts insulin activity. 3. Raises blood sugar. 4. Increases glycogenesis (liver). 5. Lowers renal threshold for glucose. 6. Increases nitrogen loss. 7. Increases serum albumin, decreases globulin. 8. Increases mobilization and utilization of fat. 9. Decreases eosinophil and lymphocyte counts. 10. Increases neutrophils, red blood cells and hemoglobin. 11. Decreases inflammatory reaction of tissues. 12. Increases secretion of HCl and pepsin. 13. Reduces capillary permeability. 14. Increases excretion of calcium and phosphorus. **General Effects** 1. Inhibition of tissue reaction to irritants (antiphlogestic effect). 2. Antipyretic, analgesic and "antitoxic" effect (clinical observation). 3. May induce exaggerated sense of well being and may precipitate psychotic reaction (probably only in predisposed individuals).	1. Retention of nitrogen. 2. Retention of potassium and phosphorus. 3. Virilization (acne, hirsutism).

an iatrogenic Cushing's syndrome. There is tendency to forget that Cushing's syndrome is a serious illness with a grave prognosis—so serious, in fact, that one has no hesitation in advising total adrenalectomy for its treatment. Admittedly, treatment with high doses of the steroid may in some situations be life-saving, or produce a temporary remission in an incurable disease. There has been a tendency to overlook the dangers of treatment with cortisone and the newer synthetic steroid hormones and to use them in cases where the treatment may prove more dangerous or disabling than the original disease. It seems likely that many of the complications of steroid therapy are intimately associated with their therapeutic action, but attempts have been made by modifying the steroid molecule to reduce some of the side effects."[74]

The various symptom complexes to be described resulted from hypersteroidism seen in patients referred to the Arthritis Clinic of the University Hospitals, Iowa City. All the cases of hypersteroidism presented moon facies, buffalo hump, various degrees of hirsutism and edema. Many showed osteoporosis on roentgenograms, and about 3 per cent of these had compression fractures of the spine. Epigastric distress was a common complaint, and about 10 per cent of these patients had histories suggestive of peptic ulcer, or showed an ulcer on roentgenogram. Some of the patients in this group had histories of hematemesis. These complications are so well known that they need no further comment.[31, 58, 100]

The side effects to be described have occurred in patients receiving any of the corticotrophic steroids from ACTH, cortisone and hydrocortisone to the newer synthetic steroids. All cases were definite rheumatoid arthritis, from very mild (stage I, class I) to severe (stage IV, class IV). About 40 per cent were males, reflecting the higher incidence of this disease among males in the State of Iowa. The age distribution was from 18 to well over 70 years, the majority being between 45 and 60. All of these individuals had positive Latex and Bentonite tests, and sedimentation rates of 80 to 120 mm./hr. (Westergren).

Restlessness, nervousness, mood changes and fatigue were universal complaints in the patients receiving large doses of steroids. This syndrome was first described by Slocumb, and was named steroid pseudorheumatism by Rotstein and Good.[89, 95] These patients have been treated with large doses of any of the steroids for a short time, or with smaller doses over a period of months. At first, these people have good suppression of the joint pains, and being pain-free, they develop some degree of euphoria. After a time, however, they develop restlessness, and then experience nervousness, and may have short periods of depression. Soon, they notice that routine activity such as housework, for women, or daily farm chores, for men, causes marked fatigue. The fatigue is relieved by a short rest period or by another dose of steroid. Later, the fatigue becomes more marked, and is not relieved by the usual period of rest. About this time, the periods of depression become more frequent and longer, and there are short episodes of forgetfulness as regards recent and/or more distant past events. Finally, the patients develop pain in the arms, forearms, thighs or shoulder girdle. Convinced that they are having a rheumatoid flare, they see their physicians and are advised to increase the steroid dose or to change to a similar or larger dose of one of the other steroids. The larger dose again suppresses the symptoms, but after a few more weeks, the patients again have a typical steroid pseudorheumatism. Rotstein and Good, writing about this syndrome, warned: "For the patient with steroid pseudorheumatism the adrenal hormones seem to behave like narcotics to the addict."[89]

The symptoms of overdosage of steroids can be readily differentiated from those of a true rheumatoid flare by a careful examination. First, the history of the drug dosage is suggestive. In a true flare, there are signs of synovitis, inflammation, and localized heat about the joints. In pseudorheumatism, the pain is muscular, periosteal and, at times, not about the joints. The complaints are out of proportion to the findings. The patient is sensitive to pressure, and adopts a "touch me not" attitude. Often, pressure over a muscle is very painful, but when the patient's attention is distracted from that area, pressure over the same point causes no pain.

MUSCLE WEAKNESS

If the patient complains of recent weight loss and weakness, steroid myopathy must be considered.[84] The incorporation of fluorine into the steroid complex at the nine alpha position produced a new series of compounds having more glucocorticoid potency and less sodium-retaining activity. When first used, it was found that some patients lost excessive weight and developed muscle weakness.[28, 42] In three individuals being treated with large doses of triamcinolone, widespread muscle damage was shown by muscle biopsy.[109] All three showed some involvement of the shoulder girdle, with weakness greatest in the trunk and pelvic girdle. Electromyographic evidence of primary muscle-fibre lesion was noted. There was a reversal of the myopathy when prednisone was substituted for the triamcinolone. Another case was reported in which the myopathy developed during treatment with fluorocortisone, another steroid with the fluorine atom in the nine alpha position.[68] The muscle changes were reversed when cortisone was substituted for the fluorocortisone. This same syndrome has been noted during treatment with prednisone and dexamethasone.[36, 45, 47, 106] Kendall and Hart followed a series of 47 patients being

treated with triamcinolone in doses up to 16 mg. daily, for periods of up to 11 months.[65] Altogether, 24 patients experienced serious side effects, the majority of which resembled those seen following other steroids. Four patients suffered muscle-wasting. Of the patients receiving less than 6 mg./day, only three suffered any discomfort, and it is suggested that this is the highest maintenance dose that can be prolonged.

At times, some of the patients will complain of stiffness and joint pain far in excess of that which they had noted previously. This is more striking in an individual who has had a long-standing rheumatoid arthritis without any flares for years—the so-called "burned out" arthritic. This syndrome may be called steroid arthritis, rather than pseudorheumatism, and can result from the administration of any of the steroids. Patients treated for conditions other than rheumatoid arthritis who have never complained of joint pain or stiffness have developed arthritis, apparently as a result of the administration of triamcinolone.[108]

If the syndrome of pseudorheumatism and/or steroid arthritis is overlooked and if the patient is continued on high doses of the drugs, serious complications may occur.[61, 89, 95] The more serious events, such as vasculitis, thromboembolic states, peripheral neuritis and pulmonary lesions, will be described later. Twelve deaths have occurred during the past five years, at the University Hospitals, in patients all of whom had pseudorheumatism from the excessive use of the drugs. If the dose of the steroid is reduced too rapidly, a state of hypocortisonism may develop. The individuals again experience fatigue, aching, soreness and emotional instability. When the steroids are discontinued abruptly, a rheumatoid flare, more severe than those encountered previously, usually develops, or an acute adrenal insufficiency and severe shock may occur. Most of these patients must be given ample rest, and some will have to be kept in bed continuously, since even slight exertion will cause them to experience marked fatigue. The dose of the steroid must be reduced in small decrements at intervals of four to seven days. Withdrawal symptoms may occur, but are mild if the dose is reduced in the manner just suggested. When the dose has finally been reduced to the smallest maintenance level, the arthritis appears less severe than before the high doses of steroids were initiated. During the period of withdrawal, the patient must be supported by means of adequate doses of salicylates, increased periods of rest, and physical therapy. At no time should the patient be exercised or pushed beyond his tolerance. Reassurance is necessary, and at times the judicious use of tranquilizers is helpful.

PURPURA AND ECCHYMOSIS

Several years after the introduction of corticosteroids for the treatment of rheumatoid arthritis, patients began developing ecchymotic areas, usually on the hands and forearms.[26, 75] These lesions varied in size from pinpoint petechiae to large areas of ecchymosis involving an entire extremity. The purpura can also be found over the lower extremities, the torso and even the conjunctivae. The patients usually assume that the discoloration has resulted from some minor trauma. The subcutaneous hemorrhages have been seen in patients being treated with any of the steroids, and are found in at least 30 per cent of the cases. Others have found the incidence to vary from 20 to 40 per cent.[96] Efforts to demonstrate the cause of this hemorrhagic tendency revealed no measurable defect of intravascular clotting factors, or any defect in the integrity of the capillary wall.[96] Scarborough and Shuster postulated that the steroid purpura was similar to senile purpura, since the histological appearances were the same.[91] Opitz *et al.*, using photomicrographs of the skin, found segmental aneurysmal dilatation of subpapillary blood vessels, diapedesis of red blood cells from dilated vascular segments, and with venous occlusion, a decrease in the number of visible blood vessels and an associated abnormal increase in the engorgement of the pre-existing dilated vascular segments.[78] These changes were found only in rheumatoid arthritics who had chronic or long-standing hypercortisonism.

The subcutaneous hemorrhages disappear when the dose of steroids is reduced, and they are therefore considered of minor importance in most cases. Consider what might happen, however, if the bleeding occurred in one of the serous membranes such as the pleura, pericardium or peritoneum. A woman aged 68 was admitted to the University Hospitals during the Asian flu epidemic of 1957. For the previous 12 years she had been treated at the University Hospitals for rheumatoid arthritis. In 1951, small multiple doses of steroids had been started, and at the time of admission she was taking only 1 mg. of prednisone four times a day. Examination of the abdomen revealed a hard, firm, round mass just to the right of the midline in the upper quadrant. Diagnostic tests failed to establish the identity of the mass. The abdomen was explored, and a mass was removed from the omentum and mesentery of the transverse colon. The mass consisted of fibroadipose tissue, with large areas of hemorrhage. The pathologic diagnosis was mesenteric hemorrhage, with granulation tissue and vascular thrombosis. She is still being treated with steroids (0.25 mg. dexamethasone t.i.d.) despite recurring subcutaneous hemorrhages. This case shows that the steroid ecchymoses can become a serious complication.

CYSTS

Cystic swelling in the center of the popliteal fossa arising from the bursa between the tendon of the popliteus and the lateral condyle of the femur is seen occasionally in rheumatoid arthritis.[71] These cysts are usually extensions of the synovial membrane. Cysts arising in other areas

are less common. Since the introduction of the corticoids, we have observed cysts in 12 per cent of our patients who had received excessive steroid therapy for arthritis. Most of the cysts appear in the popliteal space, but they can also occur around the knee joint, in the calf, about the shoulders, over the wrists and elbows, and even in the heel beneath the calcaneus bone.[37]

Adams, in 1840, described a mass in the popliteal space in association with arthritis.[1] Later, Baker called attention to cysts that he thought were hernial protrusions of the synovial membrane of a joint.[5] Sheild, as early as 1897, suggested surgical excision of these bursal cysts.[93] DeBaets suggested that many so-called Baker's cysts actually have their origin in the bursae around the knee joint.[25] Cysts of bursal origin probably account for those swellings seen in other situations in the knee joint, such as the horseshoe-shaped cysts.[16] Burleson *et al.* reviewed 82 cases with popliteal cysts, and on the basis of the histology, divided them into four types: fibrous, synovial, inflammatory and transitional.[14]

Many of the patients whom we have seen have complained of pain in the involved knee and have had difficulty in walking. They had been receiving steroids and were well suppressed when the localized symptoms were noted. Because of the pain in the knee, the dose was increased, and as a result, hypersteroidism was produced. When the dose of the drug was reduced, some of the cysts became smaller, but in other patients, the cysts had to be removed surgically. The cyst fluid was similar in all respects to that aspirated from the joint space. In a few individuals, the fluid was inspissated, forming various-sized spheres that had the appearance of tapioca. Many patients who had had cysts large enough to interfere with their walking were able to ambulate with comfort as the mass regressed in size with the reduction of the steroid dosage.

There is surprisingly little said in the literature about the increased incidence of these cysts during hypersteroidism. Beatty reported five cases with cysts, two of whom definitely had received steroids.[10] Only one of the five individuals was reported as not receiving cortisone. Harvey and Corcos described four patients with rheumatoid arthritis being treated with corticoids who developed cysts in the lower leg.[51] They concluded that the cysts might have been due to weakening of connective tissue structure by prolonged corticosteroid therapy, in part. The usual Baker's cyst may have a lining of a single layer of thin, flattened cells, with little inflammatory reaction. All of the cysts removed surgically showed a marked thickening of the lining, similar to the changes seen in rheumatoid synovitis, and therefore we describe them as rheumatoid cysts. It is interesting to note that a majority of the rheumatoid cysts had been unrecognized prior to the referral of the patients to the Arthritis Clinic because the examining physician was unaware of this complication.

ARTERITIS

As noted earlier, involvement of the small arteries is one of the systemic manifestations of rheumatoid arthritis. Painter, in 1901, remarked that he had found arteritis in synovial tissue, and suggested that the rest of the body should be studied. Arteritis was described in the German literature in 1908 and again in 1929.[9] Although the arteritis does not possess distinctive histologic characteristics, it is believed to be a specific manifestation of the disease because it does not occur in the striated muscle in conditions other than rheumatoid arthritis, because the histologic features of the inflammatory reaction are fairly constant, and because the process is limited to very small arteries.[13] Nystrom reported three cases of rheumatoid arthritis associated with periarteritis nodosa.[77] Ball, in an intensive study of five cases of rheumatoid arthritis, found disseminated arteritis typical of periarteritis nodosa in four of them.[6] Only one of them had been treated with steroids. Two instances of periarteritis nodosa in the coronary arteries were found at necropsy in 66 cases of rheumatoid arthritis. Ogryzlo observed four patients with rheumatoid arthritis in whom autopsy revealed diffuse vascular lesions ranging from periarterial fibrosis and intimal thickening to a necrotizing arteritis.[79]

Slocumb first called attention to the panangiitic reaction during chronic hypercortisonism. The frequency of arteritis in 52 cases of rheumatoid arthritis that came to autopsy at the Mayo Clinic was reported by Kemper *et al.* in 1957.[63] In the 38 that had never received steroids, no evidence of arteritis could be found. Of the 14 who had been treated with steroids, 12 showed a vasculitis, and four of these had severe necrotizing arteritis. Numerous reports are appearing in the literature describing the development of periarteritis nodosa during the course of steroid therapy.[15, 38, 60, 67] Nasr followed the cases of hypersteroidism at the University Hospitals, Iowa City.[76] Biopsies of the gastrocnemius muscle revealed that seven of 23 patients had a vasculitis. Four had changes compatible with periarteritis nodosa.

The patients who have vascular changes from excessive steroids show all the symptoms of severe hypersteroidism. If the reaction is severe, the patients will be febrile and may exhibit cutaneous ulcers, gangrene, thrombophlebitis, iritis, sepsis, pleural effusion, pneumonitis, pericarditis or peripheral neuritis. The vasculitis can be reversed in some individuals by reducing the dose of the drug. If the steroids are reduced too quickly or are stopped too abruptly, the severity of the vasculitis and its complications increases rapidly, and death may result. All of these patients must be maintained on a small dose for a long period of time before the drug can be discontinued. In a few instances, the symptoms will always return after the steroids have been discontinued.

ULCERATION

Steroid vasculitis is only the forerunner of other, more serious complications. Cutaneous ulcerations have been known to occur in steroid-treated patients who have developed vascular lesions.[35, 53, 60, 89] The ulcers may be superficial and will heal as the dose of the steroids is reduced. However, most of these ulcerations are the first sign of impending gangrene. Occlusion of some of the large vessels, usually of the extremities, may occur when the vasculitis becomes diffuse.[92, 96, 105] Nearly all of these patients have a progression of the vascular complications and die. One of our patients had gangrene of the scrotum, and at autopsy a diffuse periarteritis nodosa was found, with occlusion of the spermatic artery.

The complications such as severe arteritis, cutaneous ulcers and gangrene were rarely encountered in the pre-hormone era. Since the introduction of the adrenal corticoids, however, these serious side effects have become increasingly frequent. Prolonged high dosage, fluctuations in dosage, or sudden withdrawal of the steroids may be followed by chronic hypersteroidism, acute panmesenchymal reactions, or steroid pseudorheumatism. Ischemic skin lesions, from punctate necrosis to extensive gangrene, may develop as part of the diffuse panarteritis.

There is no specific treatment for this too-often-fatal complication. Prevention of the development of hypersteroidism can be accomplished only by using sufficiently low doses, avoiding fluctuations in the dosage, and never terminating the steroid therapy suddenly. Epstein and Engelman warn: "The association of rheumatoid arthritis of stage III or IV, subcutaneous nodules and the presence of large amounts of rheumatoid factor in the serum may constitute a relative contraindication to the use of adrenocortical steroid therapy."[35] Most rheumatologists agree that corticosteroid therapy appears to play some role in the production of the panarteritis, but is more likely to aggravate the preexisting vascular lesions in patients with rheumatoid arthritis.

NEUROLOGIC SYMPTOMS

The onset of inflammatory vascular lesions during the course of hormone therapy is difficult to diagnose. Muscle biopsy is not particularly helpful, for the lesion may be missed as a result of the segmental distribution of the arterial involvement. Neurologic symptoms and signs may be the first indication of a disseminated vascular reaction. Although rheumatoid neuropathy is frequently seen in chronic hypersteroidism, it was reported in the pre-steroid era as early as 1887 and again in 1898.[7, 49] In 1900, Allchin stated that a definite peripheral neuritis could be demonstrated in a few patients, but not in the nerves supplying the joints.[2] Inflammatory lesions consisting of focal collections of round cells have been found in peripheral nerves.[41]

Following the introduction of adrenal corticosteroids to the treatment of rheumatoid arthritis, peripheral neuritis has become one of the more frequent of the severe complications. Slocumb listed peripheral neuritis as one of the signs of severe panmesenchymal reactions. Numerous reports have appeared since, describing the peripheral neuritis.[48, 49, 59, 101] The individual most likely to develop peripheral neuritis has had long-standing rheumatoid arthritis, subcutaneous nodules, a high titre to the rheumatoid factor, usually a reversal of the albumin-globulin ratio, and symptoms of hypersteroidism. Involvement of the peripheral nerves has occurred during treatment with all of the steroids. In a few cases, the onset is very abrupt, so that the patient can remember the day and the approximate hour when his first symptoms appeared. Most of our patients have had an insidious and gradual onset, however. The symptoms may fluctuate a great deal, a few showing considerable improvement, but a number continuing to deteriorate until death. The fatal cases may develop diabetes mellitus, cutaneous ulcers or gangrene. Men develop this complication as frequently as women. The first symptoms may be numbness of the toes and feet, or severe burning pain. Sensory symptoms may be most striking, but these people usually have numbness, paresthesia or hyperesthesia involving the lower extremities more often than the upper. All types of sensation are lost, often with the exception of the position sense. The sensory loss is of the stocking or glove distribution, usually symmetrical, but it occasionally occurs as a mononeuritis. In the severe cases, motor weakness ensues, often initiated by foot-drop. Even in many of these patients, the tendon reflex may still be retained. At necropsy, a diffuse vasculitis is found, varying from periarteritis nodosa to necrotizing arteritis. The vasa nervorum are usually involved, having the same changes as those seen in the other arteries.

There is no effective treatment for this serious complication. The neuritis can start after long-term use of high doses, following withdrawal of steroids, during fluctuations in dosage, or after the patient has been changed from one type of steroid to another. This syndrome may be avoided by continuing whatever dose has become customary, rather than increasing or decreasing the amount as the symptoms vary. The best method of preventing the occurrence of peripheral neuritis is to prescribe steroids only when actually indicated, and then to keep the dosage levels low enough to avoid hypersteroidism.

PULMONARY COMPLICATIONS

Still reported finding pleural effusion at autopsy in three patients with juvenile rheumatoid arthritis.[102] More recently, Baggenstoss and Rosenberg have found evidence of previous pleurisy at autopsy in 22 out of 30 subjects with rheumatoid arthritis.[4] Rosenberg and co-workers considered that pulmonary complications constituted the most common cause of death in arthritis.[88] Many cases

of involvement of the pleura and lung in rheumatoid arthritics have been reported and substantiated by histologic studies of autopsy or biopsy material.[21, 30, 32, 86] During a study of 14,000 British coal miners being examined for pneumoconiosis, Caplan found 51 to have rheumatoid arthritis. About 90 per cent of these men showed massive fibrosis, as compared to 30 per cent of all the men examined. Recurrent pleural effusion is a frequent finding, and may be the initial disability, sometimes preceding the joint involvement. Nodular lesions similar to the subcutaneous nodule can occur in the pleura and/or in the lung.[33, 57] Caplan found that massive fibrosis was more common in miners, and in many appeared as well-defined rounded shadows on a background of minimal pneumoconiosis.[17] This has been called "Caplan's syndrome."

Diffuse fibrosis with patches of pneumonitis and atelectasis is another variant of lung involvement. At times, the diffuse fibrosis may contain bronchiectatic cavities giving the radiographic appearance of the "honeycomb lung."[27] Lastly, the vessels in the lungs may show the same characteristics of arteritis that are found in other blood vessels. Pleural effusion is seen in men more often than in women.

Pulmonary complications, although they can occur in non-steroid-treated patients, can be intensified during hypersteroidism. In many individuals, the lung changes may be symptomless, but after the development of diffuse arteritis from excessive dosage of the hormones, serious symptoms can ensue.

A 44-year-old white man was admitted to the University Hospitals complaining of arthritis and cough. He had worked as a laborer and farmer. The joint pain and swelling had started six months before he entered the hospital, and the cough had started about a month before his admission. The cough was of a dry, hacking type, never productive. Numerous examinations were performed, including bronchoscopy. The only positive finding was a diffuse infiltrate throughout both lung fields, but its exact etiology was undetermined. The laboratory tests were not revealing, and there were no L.E. cells, but both the Latex and Bentonite tests were positive. The arthritis was active and rated as stage II, class II. Marked clubbing of the fingers was present. In an attempt to establish a definitive diagnosis, a left thoracotomy and a biopsy of the lung were carried out. The biopsy showed only interstitial fibrosis and chronic pneumonitis.

He was given 30 mg. of prednisone a day, which suppressed the joint pain and swelling. After discharge, he discontinued the steroid because of the cost, and shortly thereafter developed a rheumatoid flare. He was again admitted to the hospital with an acute exacerbation of the arthritis, and at that time subcutaneous nodules were found. Prednisone was administered in doses of 22.5 mg. daily, and as the joint swelling and pain subsided, the dose was reduced to a maintenance level of 10 mg. daily. He was discharged and told to continue taking 10 mg. of prednisone daily. He returned to the hospital because of marked shortness of breath. This third visit was 20 months after the first admission, and 26 months after the onset of the arthritis. At that time, the shortness of breath was very severe, but the joint pain was limited to the neck. He complained of fatigue, weakness and muscle pain. A subcutaneous nodule was removed, which showed the typical picture of a rheumatoid nodule. Despite all efforts to help this man, he became more short of breath, and within three weeks, he died. At autopsy, a necrotizing vasculitis, chiefly in small arteries, was observed in periadrenal fat, submucosa of bowel, and skeletal muscle. This was chiefly a periarteritis, rather than a polyarteritis, although an occasional vessel did show polyarteritis. There was severe bilateral pulmonary fibrosis, with some bronchiectasis and acute pneumonitis. In the areas where chronicity was most evident, fibrinoid degeneration and necrosis in alveolar walls and small arteries was a feature of the process.

The above case represents an instance of rheumatoid arthritis with marked diffuse pulmonary fibrosis and a severe panarteritis. It is interesting to speculate on the effect of the hormones in this instance. At first, the patient received excessive doses, and subcutaneous nodules developed following withdrawal. The lung lesion progressed, as was evidenced by the onset of shortness of breath. Before death, he had marked fatigue, muscle weakness and pain in muscles rather than in joints. Clinically, he was thought to have hypersteroidism. Finally, at necropsy, he had definite indications of a diffuse necrotizing arteritis. This is another example of the dangers of excessive doses of the hormones and of the abrupt withdrawal of the steroids.

ASEPTIC NECROSIS OF JOINTS

In a comparative study of prednisone and aspirin in the treatment of rheumatoid arthritis conducted by the Medical Research Council (British) and the Nuffield Foundation, it was shown that the oral administration of prednisone delayed the progressive radiological joint degeneration in the hands and feet of patients with rheumatoid arthritis.[70] This was not found to have taken place in the hip, which seems to react differently from other joints.

Pietrogrande and Mastromarino, in 1957, reported a case of hypersteroidism in a woman who was receiving 100 mg. of cortisone by mouth, daily, for the treatment of pemphigus.[85] Degenerative changes and avascular necrosis developed in the left femoral head, and after four years of continuous therapy, it acquired an appearance very similar to that of a Charcot joint. Soon other reports followed, describing Charcot's arthropathy of the hip and aseptic necrosis of the femoral head due to steroid therapy.[18-20, 73, 103, 104]

During the past two years, five patients have been seen at the University Hospitals who had aseptic necrosis of the head of the femur while on large doses of steroids. One of them was a 34-year-old white woman admitted to the University Hospitals with aseptic necrosis of the head of the femur 22 months after the onset of joint pains.

At first, she had had fever and migratory joint pains and swelling. A systolic murmur was heard, at that time, over the mitral region, and she was therefore thought to have rheumatic fever. Her physician started her on 100 mg. of cortisone daily, together with six grains of aspirin per day, and kept her at bed rest. The migratory joint swelling disappeared, but she continued to have a daily fever. One month later, the sedimentation rate had increased to 105 from the initial reading of 66 mm./hr. Instead of cortisone, she was then given 240 units of ACTH daily, and the aspirin was changed to 8 Gm. of sodium salicylate per day. Ten days later, she was afebrile, she had no joint pain, and her sedimentation rate was 53 mm./hr. She was then discharged from the hospital and advised to continue the 8 Gm. of sodium salicylate. She was changed from the corticotrophic hormone to 4 mg. of triamcinolone twice a day. Shortly thereafter, she again had vague pains and was seen for the first time at the University Hospitals.

No synovitis, limitation of motion or atrophy of intrinsic muscles of the hands was found. The systolic murmur was still heard, but there was no evidence, either clinically or from the laboratory tests, that she had rheumatic heart disease. She presented a definite Cushingoid facies, including the pink color of the face seen during triamcinolone therapy, a slight buffalo hump, and many purpuric areas over all extremities. The sedimentation rate was 27 mm./hr., and both the Latex and Bentonite tests were negative. She was advised to reduce the dosage of steroid slowly. A month later, she returned to have several teeth extracted. To prevent adrenal dysfunction, extra cortisone was administered, and she tolerated this procedure very well.

Three months later, she returned complaining of marked fatigue, severe joint pains and difficulty in walking. Instead of reducing the triamcinolone dosage, she had continued to take 8 mg. per day, and on some days would take 12 mg. At that time, there was definite swelling of the small joints of both hands, flexion contracture of both wrists, with marked limitation of motion, and increased fluid in both knees. The Cushingoid facies was still present, and only a few purpuric spots were present in the skin of the lower extremities. The sedimentation rate was 57 mm./hr., and the Latex test was negative, but the Bentonite test was weakly positive. The synovial fluid removed from the knees gave no clot with glacial acetic acid (Ropes' test) and contained 15,000 white cells per cubic millimeter. Both the Latex and the Bentonite tests on the synovial fluid gave positive reactions.

About a month prior to this admission, she had had mild pain in the right hip. Roentgenograms of both hips showed some narrowing of the left hip joint space, but otherwise was normal. On the right, the space was irregular and narrowed, there were subchondral areas of rarefaction and areas of increased density. This was diagnosed as aseptic necrosis of the femoral head by the members of the orthopedic staff. A core biopsy was taken, and a tibial bone graft was placed in the right femoral head.* Synovectomy of the right wrist was carried out at the same time. At the time of the operation, the patient was on a maintenance dose of 2 mg. of triamcinolone daily, and did not need any extra steroid before or after surgery. The postoperative course was uneventful. She was discharged on a maintenance dose of 1 mg. of triamcinolone four times a day, and was advised to increase the salicylates when necessary, rather than the steroid.

Six months later, she returned to the hospital with hypersteroidism and pseudorheumatism. Instead of increasing the salicylates, she had increased the dose of steroid again, using 8 mg. to 12 mg. per day. Fluid was present in both knees and left shoulder, but otherwise the findings were unchanged. The synovial fluid was removed from the joints, and steroid was instilled. Shortly before this admission, she had begun having bouts of nausea and vomiting. Triamcinolone is known to cause muscle weakness, irritability, nausea and vomiting, and therefore Decadron, 0.5 mg. five times a day, was substituted. This large dose was reduced, over a three-week period, to 0.25 mg. four times a day. Intensive physical therapy in the form of moist air, underwater exercise and muscle strengthening exercises were carried out, and salicylates were given whenever and as often as needed.

The patient had a remarkable symptomatic improvement. The sedimentation rate at the time of admission was 118 mm./hr., and dropped to 23 mm./hr. The steroid was reduced to 0.25 mg. twice a day. Gold was started, and the steroid will be discontinued shortly. A routine roentgenogram of the pelvis was obtained just before discharge (at the time this is written). The right hip showed a good postoperative result, but the left hip, which was previously normal, now shows aseptic necrosis, with more damage than was seen in the right femoral head. The orthopedic surgeons have advised a reconstruction of the hip.

This woman received massive doses of steroids which were reduced abruptly. This was followed by hypersteroidism, pseudorheumatism, marked progression of the arthritis, and finally iatrogenic degeneration of both hips. As Nabarro warned might happen, she now has a condition more disabling than the original disease.[74]

LOCAL INJECTIONS OF STEROIDS

Murray reviewed the radiological bone changes in Cushing's syndrome and steroid therapy.[73] He discussed osteoporosis, fractures of various bones

* Joint cartilage destroyed and replaced by granulation tissue which extends into the subchondral area at least 2 cm. Repair phase of appositional new bone on old is extensive in granulation zone. Only minimal necrosis of old trabeculae apparent.

with pseudo-callus formation, stress fractures of the femoral neck, aseptic necrosis, and a steroid arthropathy similar to Charcot's arthropathy. The painless degeneration of a joint can occur either from systemic steroids or from local injections. Chandler and Wright injected 25 knees of 18 patients with hydrocortisone, and found radiological evidence of deterioration in 13 joints.[18] The most significant part of that study was the fact that pain was relieved, the range of motion was increased and the walking time improved in the 13 joints that showed deterioration. They concluded: "The evidence is very convincing that treatment with intra-articular hydrocortisone compounds is potentially dangerous; its very success carries with it a threat of accelerating joint destruction." A Charcot-like arthropathy has been reported following intra-articular injection of steroid.

The intra-articular injection of hydrocortisone, introduced by Hollander, is generally regarded as of value in the treatment of rheumatoid arthritis.[55] Many papers have appeared in the medical literature recommending this route of administering the steroids,[22, 29, 56, 64, 110] but one group of workers did not support the claims made for hydrocortisone as a therapeutic agent.[72] A series of 181 osteoarthritic knee joints were divided into four groups, each treated with a different substance, namely, lactic acid, novocaine, hydrocortisone and normal saline. Equally beneficial subjective reactions were noted in each group, and there was no statistical variation. A fifth group was treated with mock injections, in which a needle was introduced into the skin, but no actual injection was made. The beneficial results reported by members of this group were equal, statistically, with those reported by the patients who had been given therapeutic agents.

Local injection has become a routine procedure and is used for every type of rheumatic disease. No attempt is made to differentiate the kind of arthritis or the severity of symptoms. Every joint in the body has been subjected to this type of treatment.[39] The indication for intra-articular injections seems to be whether or not a patient complains of pain. Because pain is relieved, both the patient and the physician are lulled into thinking that the treatment has been successful. As the pain is reduced, the joint is subjected to more stress, and especially in rheumatoid arthritis and osteoarthritis, the process may be greatly aggravated. In rheumatoid arthritis, joints should be needled only when excessive fluid is present, interfering with motion. The joint pain and swelling will subside as the disease process improves, especially if the patient is treated with antirheumatic drugs. In osteo-arthritis, it is wise to inject the knee, or on occasion the hip or shoulder joint if necessary, and not to repeat unless there is a clear-cut indication for this procedure. Most of these patients can be controlled by simple methods including salicylates and physical therapy.

Only rarely does infection result from entering the joint with a needle. The cases of infection seen at University Hospitals, or sent to Iowa City, have had one of the staphylococci as the infecting organism. As a rule, these do not respond to the ordinary antibiotics, and are extremely difficult to treat.

CAN WE CONTINUE USING STEROIDS IN ARTHRITIS?

From the above, it would seem that the steroids should not be used to treat rheumatoid arthritis. Yet, the adrenocortical hormones are probably the most effective substances that we now have to suppress the symptoms of a rheumatoid flare. The physician must first make a definitive diagnosis. Second, he must evaluate the grade and stage of the disease. Third, he must acquaint the patient with the natural history of the disease, impressing upon him that any therapeutic agent merely suppresses the symptoms and has no curative effect. He must stress the point that salicylates and physical therapy are still the basic tools in the treatment of the arthritic. He must impress upon the patient that pain is not the indicator of rheumatoid flares, but may result from the ravages of the disease. The person who can tolerate some pain rarely becomes confined to a wheelchair or becomes bedridden. We have seen too many patients who continue to take excessive doses of steroids and, because they feel good, discontinue salicylates, physical therapy and rest, hoping that they are cured. When they have recurrences of pain, usually from hypersteroidism, they increase the dose. It must be remembered that the Empire Rheumatism Council's multi-clinic study of patients with rheumatoid arthritis treated by aspirin and by cortisone over a four-year period indicated no significant difference between the therapeutic effects of the two drugs.[34]

The aim of steroid therapy is to provide optimal, but not maximal relief, without the development of undesirable side effects. This requires that the dosage be governed by the patient's tolerance to the hormones, rather than by the severity of his symptoms. What are the indications for starting steroids? The literature is replete with articles on the clinical effectiveness, contraindications, complications and the superiority of one steroid over another, but very little has been written about specific indications. Steroid therapy should be considered for the individuals (1) who have not responded adequately to simple measures; (2) who have active, progressive arthritis and in whom the joint changes are still reversible; (3) in whom gold therapy has failed; (4) who develop malnutrition and inanition despite adequate conservative therapy; and (5) who have failed to improve significantly after three to six months of conservative therapy, and whose obligations require that they return to work, even at some future risk.[8, 12, 13]

Certain contraindications to the prolonged use of steroids are absolute, and others are relative. In the former category are active tuberculosis, active psychotic states, herpes simplex ophthalmicus, acute exanthemata or a history of recent exposure to them, severe infections that cannot be

controlled by antibiotics, and Cushing's syndrome. The relative contraindications are congestive heart failure, thromboembolic phenomena, diabetes mellitus, active peptic ulcer, severe osteoporosis, severe essential hypertension, convulsive disorders, arrested tuberculosis and renal insufficiency.

Based on animal experimentation, the manufacturers have chosen arbitrary dosages for use in man. The average tablet of cortisone contains 25 mg.; hydrocortisone, 10 mg.; prednisone and prednisolone, 5 mg.; methylprednisone, 4 mg.; triamcinolone, 4 mg.; and dexamethasone, 0.75 mg. More recently, the fluoride-containing steroids have been tableted in smaller doses. In order to treat patients without their developing hypersteroidism, it is necessary to use doses smaller than those contained in the average tablet. The maximum daily amount of these drugs that can be used over a prolonged period of time without producing side effects are: cortisone, 37 mg.; hydrocortisone, 12-15 mg.; prednisone and prednisolone, 8 mg.; methylprednisone, 6 mg.; triamcinolone, 6 mg.; and dexamethasone, 1.5 to 2.0 mg.

DOSAGE OF STEROIDS PRESCRIBED AT S.U.I.

To obtain optimal therapeutic effects without causing sudden increases in the systemic visceral manifestations (side effects) of rheumatoid arthritis, we have always prescribed very small, frequent doses throughout the day. A patient with an acute flare will be given 1 mg. of prednisone, five to eight times a day, depending on the severity of the symptoms. Adequate doses of Bufferin are given to overcome stiffness or pain. The patient at first may require 10 to 12 tablets a day, but as the steroid becomes effective, the dose of Bufferin is reduced. The salicylate is not given with the steroid, for we allow the patient to decide when he needs the analgesic. The effectiveness of the steroid can be judged by the total daily dose of Bufferin that the arthritic requires. As the condition improves, the steroid is reduced by one dose (1.0 mg.). After the prednisone has been reduced to 3 or 4 mg. per day, the patient is told to take 0.5 mg. six or seven times a day. Many of our patients are maintained on 0.5 mg. of prednisone two to four times a day (total daily dose of 1.0 to 2.0 mg./day).

To prove that such minute amounts are effective, we have repeatedly reduced the maintenance dose, and produced true rheumatoid flares. The patients are instructed to continue taking Bufferin, and if they have an increase of pain, to increase the Bufferin rather than the steroid. All patients are given physical therapy or are instructed in home care. When necessary, other analgesics such as Darvon are used, and tranquilizers are prescribed when indicated. Triamcinolone is given in 1 mg. doses five to six times a day, and gradually reduced to 1 mg. one to three times a day as a maintenance level. Dexamethasone is used in doses of 0.25 mg. five and, only occasionally, six times a day, and is reduced to 0.25 mg. once or twice a day as a maintenance dose.

Recently both triamcinolone and dexamethasone have been prepared as syrups or elixirs, thus allowing the use of smaller doses. Elixir of Decadron can be given in doses of 0.125 mg., and instead of prescribing 0.25 mg. (half a tablet) twice a day, one can have the patient take 0.125 mg. of the elixir three to four times a day. Doses as small as 0.4 mg. of triamcinolone can be prescribed by using the Syrup of Aristocort. In a few patients with severe arthritis, the maintenance dose will be higher, but even if the maximum dose is required, it is still low enough to prevent side effects. Purpuric spots still occur even with these minute doses.

The advantages of the very small, frequent doses are that they can be increased or decreased without precipitating a panmesenchymal reaction. They can be withdrawn in a shorter time, if withdrawal becomes necessary, and they afford the best protection against the production of steroid complications. Many of our patients who were on a maintenance level of three to four milligrams of prednisone, two to three milligrams of triamcinolone, or half a milligram of dexamethasone have had various surgical procedures without any extra steroid before or after surgery.

Excessive doses of corticosteroids, marked fluctuations in the dose prescribed, or abrupt withdrawal of the hormone during the treatment of rheumatoid arthritis can cause hypersteroidism, a panmesenchymal reaction. The effect of this serious complication is a panvasculitis ranging from a simple vasculitis to a severe necrotizing arteritis. Many of the small, and occasionally one of the large, vessels will be occluded with thrombosis, causing ischemia of the surrounding tissue. This may lead to cutaneous ulcerations, gangrene of the extremities or viscera, a breakdown of rheumatoid nodules, peripheral neuritis, both motor and sensory, and an increase of the inflammatory granulomatous lesion in any part of the body. These severe, serious states are intensifications of the visceral manifestations already present in rheumatoid arthritis.

Other abnormal changes taking place during hypersteroidism are purpura and ecchymosis, myopathies, pseudorheumatism and the appearance of rheumatoid cysts. The symptoms of hypersteroidism are nervousness, mood changes, fatigue, weakness, pain in muscles, anorexia and, at times, nausea and vomiting. In many patients, the abnormal changes may be reversible if the dose of steroid is reduced. Increasing the dose to suppress symptoms may increase the mesenchymal reaction, resulting in a permanent periarteritis nodosa or even death.

Hypersteroidism, with all of its serious complications, can be avoided if all physicians will adhere to the precautions outlined by Bunim, or if they will remember Hench's advice that the aim of steroid therapy in rheumatoid arthritis is to provide optimal, rather than maximal, relief of symptoms.[13, 52]

CONCLUSIONS

1. Rheumatoid arthritis is a systemic disease with many visceral manifestations. The basic lesion is an inflammatory granuloma similar to the subcutaneous nodule.

2. Adrenocortical hormones or corticotrophin in excessive amounts can cause a state of hypersteroidism. This same syndrome can result from fluctuations in steroid doses or from an abrupt withdrawal of the steroids. During hypersteroidism, a panmesenchymal reaction occurs which intensifies the visceral manifestations. The early symptoms of the hypersteroid state are nervousness, mood changes, fatigue, weakness and muscle pains or pseudorheumatism. Increasing the steroids temporarily suppresses the symptoms of hypersteroidism, but at the same time increases the inflammatory changes, especially in the blood vessels. These changes result in vasculitis, periarteritis, necrotizing arteritis or periarteritis nodosa.

3. Muscle weakness, muscle atrophy and muscular dystrophy are not uncommon complications of all steroids and can be reversed by reducing the dose of hormone.

4. Purpura and ecchymosis are minor, reversible complications, but can become serious if the hemorrhage occurs in serous membranes or viscera. One of the more serious complications from severe vasculitis and the thromboembolic phenomena is gangrene of the skin and/or the extremities. This often causes the death of the patient.

5. Rheumatoid neuropathy, one of the complications of rheumatoid arthritis, is accentuated during hypersteroidism.

6. Pleural effusions or diffuse fibrosis of the lungs can be intensified during hypersteroidism, making the patient a pulmonary cripple or bringing his death.

7. Aseptic necrosis, Charcot-like joints, or deterioration of an arthritic joint can occur from systemic administration of steroids or local injection into joints.

8. Hypersteroidism may be avoided by using small doses of the adrenocortical hormones, or by prescribing very small, multiple doses. The amount of active steroid in the tablets now being used is too large to prevent hypersteroidism. The syndrome of hypersteroidism can develop from the use of any of the steroids now on the market, as well as from corticotrophin.

9. Steroids do not improve or arrest the rheumatoid disease, but merely suppress the symptoms, and should be used in conjunction with salicylates, physical therapy, rest, good nutrition and other measures aimed toward the maintenance of activity.

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The Klinefelter Syndrome

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PATIENTS WITH Klinefelter syndrome may consult a dermatologist, a general surgeon, a urologist, an internist or a pediatrician, since initially their complaints can vary from a lack of beard, gynecomastia, infertility, or ease of fatigue, to an inability to progress normally in school. The observation that these individuals are chromatin-positive[1-3] (female) has stimulated considerable interest, and whereas formerly such cases were recognized only in special medical centers, now the diagnosis is being established by a great variety of clinicians. Indeed, the significance of signs and symptoms appearing before puberty has enabled the physician to single out boys who will develop the syndrome. Incidentally, the syndrome becomes manifest during adolescence, and it is thus erroneous to speak of "prepubertal Klinefelter syndrome."

The syndrome was first described by Klinefelter, Reifenstein and Albright in 1942.[4] They listed its chief features as: (1) onset during adolescence, (2) bilateral gynecomastia, (3) small testes, (4) aspermatogenesis, (5) evidence of normal to moderately-reduced function of the Leydig cells, and (6) increased excretion of follicle-stimulating hormone and usually a reduced excretion of 17-ketosteroids.

Testicular biopsies in seven cases reported by those authors showed "varying degrees of the same lesion. This involved the tubules and in its most advanced state consisted of hyalinization of all the tubular elements. . . . The less advanced lesions showed partial hyalinization, with impaired spermatogenesis; in no instance was normal spermatogenesis present." They indicated that "it seems probable that simple shrinkage of tubular elements can account for the apparent increase in the number of interstitial cells."

Heller and Nelson[5] demonstrated that gynecomastia is not always present and that the interstitial cells show various abnormalities. Balze, Arnillaga, Irazu and Mancini[6] later reported "large nodular formation of Leydig cells with adenomatous appearance composed of hypertrophic cells with marked signs of proliferation. Only a few of them showed cytochemical signs of secretory activity." They did observe a few tubules with germinal cells advanced to the primary spermatocyte, and occasionally to the spermatid stage.

Using serial sections of the whole testis from three chromatin-positive patients with Klinefelter syndrome,[7] we have previously reported spermatozoal formation in isolated seminiferous tubules of all three individuals, thus indicating a discrepancy between the female sex chromatin designation and the gonadal histology. It soon became apparent that all patients with the stigmata of the syndrome were not chromatin-positive, and it was quickly realized that the disorder does not represent a specific entity. This finding has led to a variety of nosologic notions such as "pseudo-male," "seminiferous tubular dysgenesis," "chromatin-positive micro-orchidism," "pseudo-Klinefelter syndrome," "true Klinefelter syndrome" and the like.

At the risk of compounding confusion, we have chosen to regard the term *Klinefelter syndrome* as applicable only to those patients whose chromatin tests are positive. Upon that assumption, the discrepancy between criteria for sex rightfully entitles these cases to be classified as an "intersex." There is little to be gained by continuing to lump all of the various conditions of testicular and subsequent endocrine failure under one nosologic term.

ETIOLOGY

The chromatin-positive nature of the somatic nuclei suggests that these patients are genetic females. Further evidence for this concept is found in the color-vision testing of these individuals.[8] Congenital red-green colorblindness is found in approximately 8 per cent of normal males, but in only 0.6 per cent of normal females. The incidence of colorblindness in several series of chromatin-positive males has failed to reveal the expected male incidence of colorblindness. This finding suggests that these individuals are genetically female. Recent chromosomal studies of these patients have revealed an abnormal chromosomal constitution—XXY or XXXY.[11-13]

In evidence published elsewhere, we have suggested that for the present Klinefelter's syndrome should be regarded as the adult manifestation of a state of true intersexuality. The morphologic evidence of true intersexuality is usually absent at the time the syndrome becomes manifest. Further studies should reveal whether there is complete progression of gonadal dysgenesis (unilateral or bilateral) from slightly dysgenetic ovary through ovotestes to only testicular elements in chromatin-positive individuals. In support of this contention, there has been a report of cases of true intersexuality in which an ovotestis or ovary was present and the opposite gonad was a testis, the

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histologic appearance of which was indistinguishable from that seen in the Klinefelter syndrome.[9, 10]

MANIFESTATIONS OF THE KLINEFELTER SYNDROME

There is not set catalog of manifestations. That is to say, several signs may be present while others are absent.

1. Perhaps the most consistent abnormalities are the small size of the testes, and aspermia. However, the penis and scrotum are usually normal.
2. Signs of abnormalities of the distribution of the hair include the "fur cap" head hairline, where the hairline is more or less straight without peaking; the beard may be scanty or absent; and the pubic hair pattern is that of the female.
3. Gynecomastia is usually quite pronounced, although it may be absent.
4. Frequently the span of the arms is greater than the height, the distance from pubis to heel is increased, and there is an increased carrying angle at the elbow.
5. As for the laboratory findings, aspermia is usually present; the 24-hour urinary excretion of 17-ketosteroids is normal or below the normal range; the urinary gonadotrophins are elevated; and the chromatin test is positive.
6. The typical histology of the testis is as follows. Leydig cells are numerous and are arranged in clumps. Often the cytoplasm is smokey, and at times it contains brownish pigment. The nuclei vary in size and shape, and sex chromatin bodies may be observed. The bulk of the seminiferous tubular component is represented by "ghosts"—small hyalinized tubules. An occasional small tubule contains Sertoli cells without germinal representatives. However, the rare encounter with a tubule containing germinal cells does not exclude the diagnosis. Ferguson-Smith believes the lack of elastic tissue in the hyalinized tubules is an important and diagnostic feature.

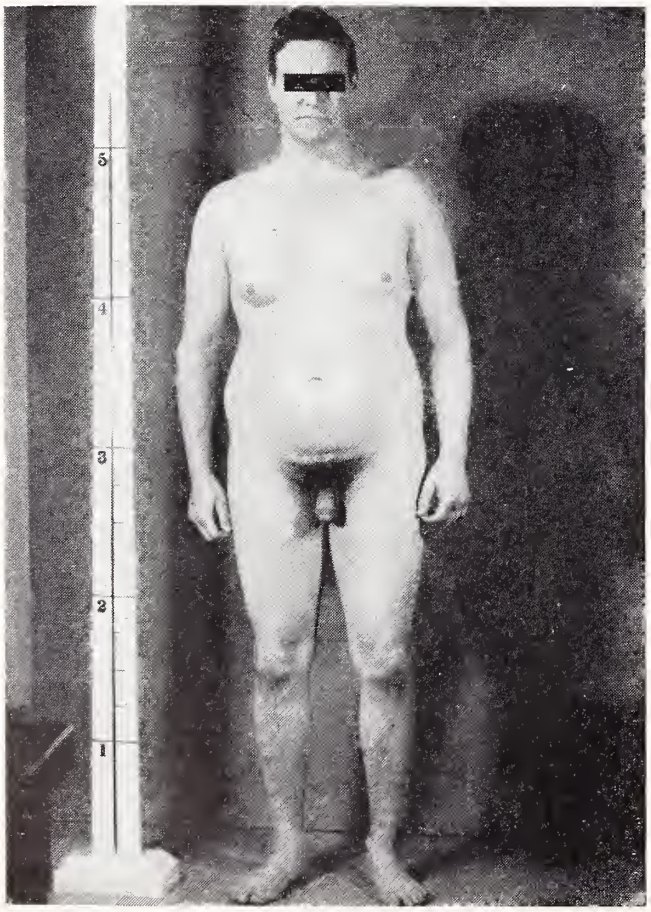

Figure 1. A 33-year-old patient with Klinefelter syndrome. Note the straight hairline of the head, the female type of pubic hair and gynecomastia. Aspermia, elevated urinary gonadotrophins, and normal excretion of urinary 17-ketosteroids were demonstrated. The chromatin test was positive. The depot type of testosterone (200 mg. every two weeks, intramuscularly) produced a beard and an increased sense of vigor, but had no effect on the gynecomastia. Treatment has been continuous for four years.

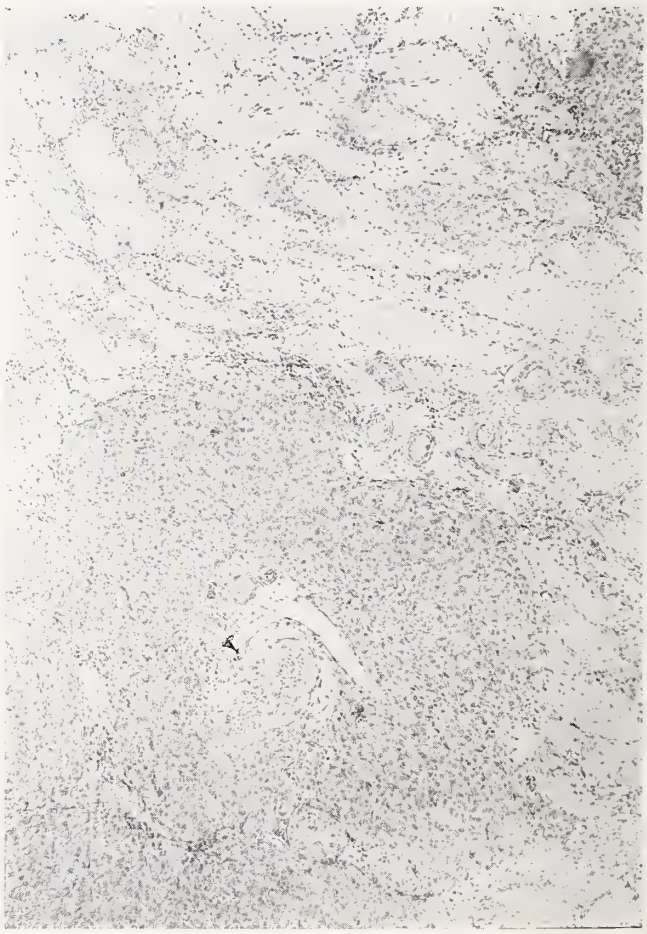

Figure 2. Photomicrograph of testis from a patient with Klinefelter syndrome. The light areas represent hyalinized seminiferous tubules; the dark areas represent masses of Leydig cells. At the bottom are some surviving tubules with cells.

DIFFERENTIAL DIAGNOSIS

Essentially three types of patients with small testes will be encountered:

1. Klinefelter syndrome (as here defined).
2. Primary testicular failure, chromatin-negative, congenital in origin, without any history of testicular insult, accompanied by increased production of urinary gonadotrophins.
3. Secondary testicular failure (a) arising from failure of the pituitary gland, or (b) secondary to trauma or orchitis.

The chromatin test, the histologic nature of the testicular lesion, and the history will make it possible to establish the proper diagnostic concept.

TREATMENT

Enlargement of the breasts may be eliminated through bilateral mastectomy, but the administration of hormones will not reduce their size.

Infertility is refractory to any known therapy. The administration of testosterone (depot type) results in the growth of beard, increased libido and greater muscle strength. The high level of urinary gonadotrophic activity subsides, and Leydig-cell hyperplasia and hypertrophy recede.

PREPUBERTAL MANIFESTATIONS

As has been said, it is fallacious to speak of the "prepubertal Klinefelter syndrome," for the definition states that the syndrome appears during adolescence. However, the chromatin-positive boy does exist. The first such case was described in 1957.[14] Testicular biopsies revealed seminiferous tubules containing germinal and sustentacular cells; others were sterile. No hyalinization of tubules or Leydig-cell development was found. Bodies found within the seminiferous tubules were thought to be oocytes, and it was thought that work might proceed on the hypothesis that the Klinefelter syndrome is an adult manifestation of a true intersex, the morphologic evidence of true intersexuality having disappeared by the time the syndrome became manifest.

Several series of chromatin-positive boys[15] have been collected, and it has been shown that they are abnormally tall and exhibit some signs of mental retardation—significant points for the alert clinician.

The boy who will develop the Klinefelter syndrome can be singled out on the basis of the chromatin test and a testicular biopsy. The biopsy is essential to the diagnosis, since some cases with scrotal ovotestes are chromatin-positive. Prior to the chromatin test, there was no way of anticipating the development of the Klinefelter syndrome. There has, therefore, been no experienc in prophylactic therapy. Our 10-year-old chromatin-positive boy (now 13 years of age) has been started on low-dose testosterone therapy. The androgen should virilize him, and by suppressing pituitary gonadotrophic activity, it should prevent the anticipated interstitial hyperplasia and possible tubular sclerosis.

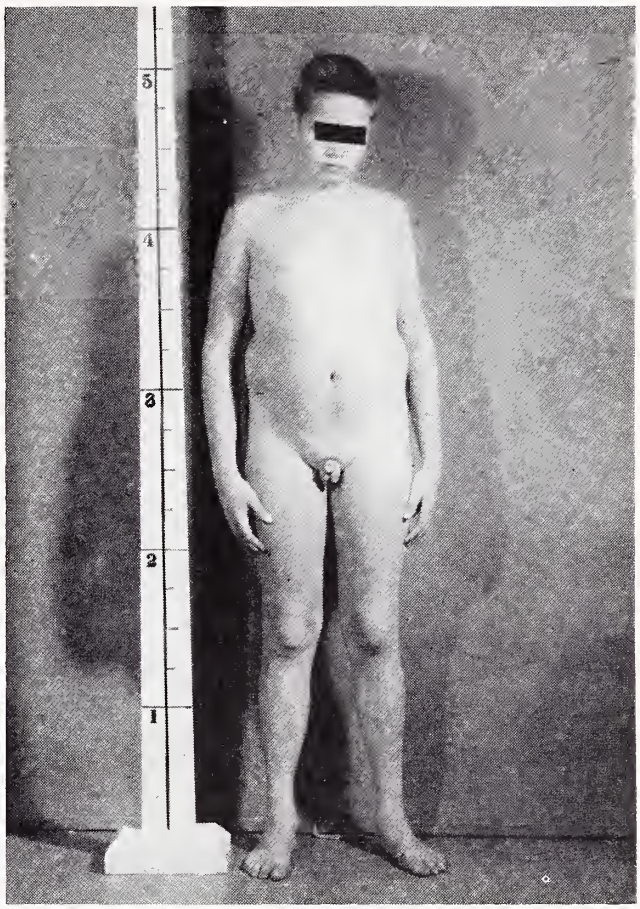

Figure 3. A 10-year-old chromatin-positive boy who is tall for his age and whose mental alertness is somewhat deficient. The urinary excretion of 17-ketosteroids was within the normal expected range, and urinary gonadotrophins were not detected. It is predicted that he will develop the Klinefelter syndrome.

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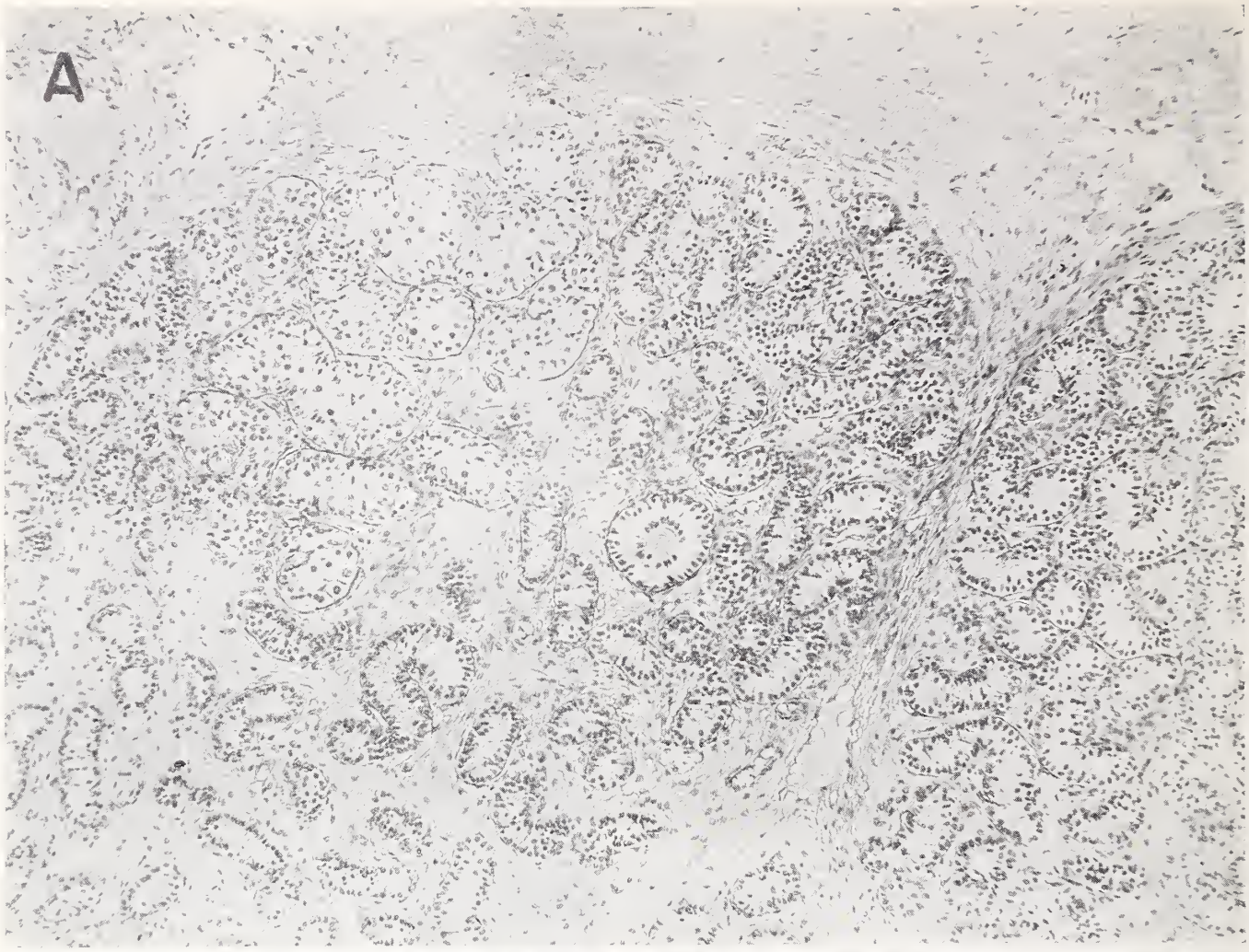
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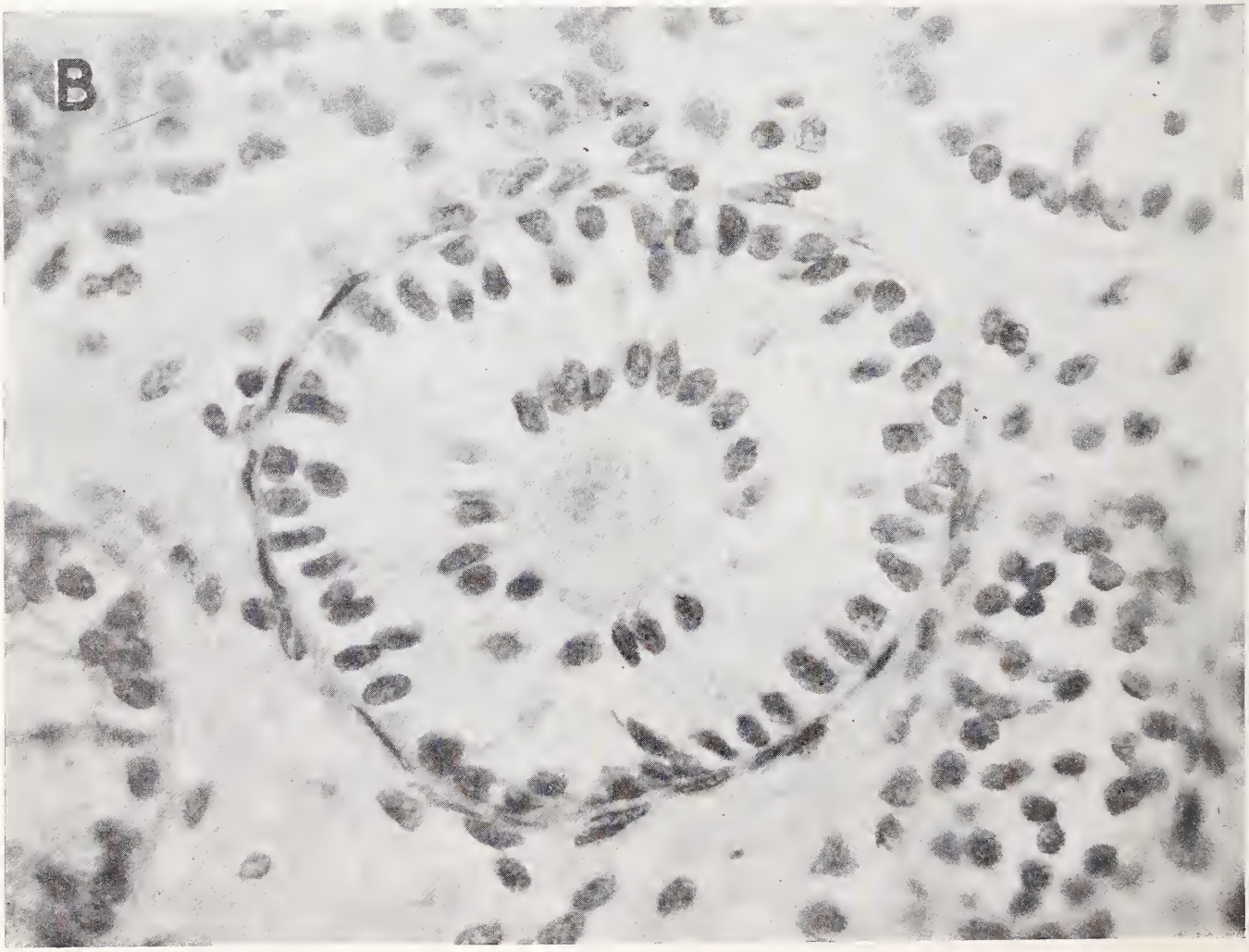
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Outpatient Treatment of the Alcoholic

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IN RECENT YEARS much attention has been directed at the prevalence of alcoholism in the United States. It is estimated that 70,000,000 Americans drink socially, and that about 5,000,000 of that number create a problem for themselves or for others through excessive drinking.[1] Mulford,[2] employing the Jellinek formula, has estimated that there are in excess of 40,000 alcoholics in the State of Iowa. The validity of the Jellinek formula is open to question, even though it has been tested against other estimating methods with favorable results. However, any or every estimate of the prevalence of alcoholism will probably be questioned by some people, since there is no universally accepted set of criteria for the condition. Definitions based upon frequency, quantity and duration of drinking have proved to be too narrow, and attempts to broaden the definition by including material from anthropology and sociology have resulted in vague and ill-defined concepts. A further difficulty stems from the diverse views and reactions within a community to the alcoholic and his problem. It may be viewed and dealt with as a moral, legal, medical, racial, economic or other issue, depending upon the particular circumstances of each individual case.

This diversity of opinion points to the probability that each individual has his own private or personal concept as to what constitutes alcoholism.[3] The person who refrains from drinking entirely, himself, may take the extreme view that anyone who drinks alcohol in any form or amount is an alcoholic. The majority of people who drink, however, think that alcoholism is any drinking in excess of their own particular drinking patterns. Thus they tend to exclude themselves from the alcoholics. An inclination to place oneself on a pedestal may in part explain the difficulties that we have in establishing generally acceptable criteria.

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Even though the American Medical Association recognizes alcoholism as an illness which should have the attention of physicians,[4] there are many doctors as well as laymen who disagree. As long as there continues to be such a gross lack of precise knowledge of the relative importance of physical, mental and social factors in the etiology of the condition, it must be expected that physicians will be hesitant to accept alcoholism as an illness. One frequently hears the statement that a medical approach to the treatment of uncomplicated alcoholism has not been outstandingly successful, as compared with other approaches, and that the basis for physicians' indifference to the problem lies therein. This cannot be considered a good argument, since the epileptic, the diabetic or the accident-prone individual may present problems of similar or even greater magnitude and still be regarded as a deserving patient. It ought not to be forgotten, however, that the average physician is an extremely busy man, and the alcoholic who is poorly motivated for treatment challenges the physician's patience. In some instances, there are valid reasons why a physician cannot devote the necessary time to an attempt at improving the motivation of this particular patient.

Despite the aforementioned considerations, however, one cannot altogether escape from the conclusion that traditional, moral and personal prejudices have much to do with the existing attitudes toward the acceptance of alcoholism as a medical illness. But once the alcoholic develops a recognized complication, e.g., neuritis or psychosis, these attitudes are rapidly put aside. Now, there is objective evidence of illness. The physician's obligation is clear, and the drinker becomes a patient.

THE CURRENT STATUS OF ALCOHOLISM

There have been few reliable longitudinal studies dealing with the course of untreated alcoholism. Lemere,[5] however, investigated the life histories of 500 deceased alcoholic patients and

Fig. 4. A. Photomicrograph of testis biopsy from a 10-year-old chromatin-positive boy. Tunica albuginea at the top border of the picture. Convoluted seminiferous tubules to the right are sterile. Tubules, upper left, contain germinal cells. Intratubular body is present at about the center. B. Photomicrograph, under higher power, of intratubular body. Note the nuclear membrane and the double layer of investing sustentacular cells suggesting a corona radiata.

found that nearly 30 per cent drank progressively, with death resulting directly or indirectly from alcoholism. Nearly another 30 per cent continued to drink their accustomed amounts; 10 per cent drank less with the passage of time; and the remaining 33 per cent eventually abstained, though in many cases the patient stopped only after incurring a terminal illness. Such a course would place alcoholism in the category of chronic illnesses[6]—ailments which may progress or stabilize, but are usually characterized by remissions and exacerbations. If in addition to the physical and psychological damage incurred by the drinker himself, one considers the psychological, economic and social damage to the families concerned, he can recognize that alcoholism is indeed a public health problem.

A scientific approach to the treatment of an illness will include an attempt to identify and then remove the causal agent. Measures aimed at keeping beverage alcohol away from everyone, exemplified by prohibition in the U. S. A., have not been successful. Since only a small proportion of drinkers become alcoholics, our concern must be with the factors that may have a bearing on the excessive quality of the drinking. At the present time, the factors that are considered important have been broadly categorized as physiological, psychological and social. Existing knowledge regarding the precise nature and mode of interaction of these factors is far from clear. One of the most basic questions that have been posed is: "Are alcoholics a distinct group who have some inherent biological or psychologic defect which makes them vulnerable to the use and effects of alcohol, or would anyone who drank to excess eventually exhibit the characteristics of the alcoholic?"

In an attempt to answer these questions, medical research has at various times implicated autonomic disturbances, hormonal imbalance, vitamin deficiencies and metabolic disturbances as being related to the problem. Psychiatric research has demonstrated the mental disturbances that contribute to and result from alcoholism. Sociology and anthropology have focused attention on the racial and cultural differences governing the use and abuse of alcohol in the population. The problems of evaluating and synthesizing these various contributions are immense, but such research must continue if a proper understanding and scientific treatment are the goals to be attained. At the present time, Block[7] considers that our approach to the problem must be empirical, that we must use whatever means of relief has proved valuable, that we must educate the layman and the professional toward accepting the problem as an illness, and that we must continue our research.

TREATMENT—GENERAL CONSIDERATIONS

A preventive and treatment program for alcoholism needs to be broad enough to include contributions from fields other than clinical medicine. A coordinated approach will utilize education and research as well as treatment. The population at large holds many contrasting attitudes toward the use of alcohol. Some segments of society seem to reject the use of alcohol completely, whereas others are relatively tolerant of drunkenness. In both of these extreme attitudes, there is an inherent paucity of individual or group control in respect to the use of alcohol. Certain cultures in which group controls are highly developed have low rates of alcoholism. Such controls can be developed over an extended period of years through proper education and legislation. Physicians can contribute to this educational process by accenting the physical and mental aspects of the condition, thereby putting the moral issue in proper perspective, and by promoting the establishment of hospital and outpatient facilities for the treatment of the alcoholic.

Basic research in this field, by its very nature, is best left to the full-time researchers who have the time and facilities. Since our treatment is largely empirical and gleaned from experience, expanded clinical research is also necessary. Opportunity for such work can be made available to the physician through the development of treatment services for both acute and chronic alcoholics. The advent of tranquilizing drugs has helped enormously in the management of acute alcoholics in the general hospital. It is to be expected that as experience grows, in the management of these acutely ill patients, more liberal hospital admission policies will be instituted. In the meantime, the physician's office, the hospital outpatient department and the mental health clinic will continue to be the receiving stations for the non-acute alcoholic and his problems.

THE STATE PSYCHOPATHIC HOSPITAL'S TREATMENT PROGRAM

The question was asked: "What kind of outpatient service can the State Psychopathic Hospital provide for alcoholic patients?" A program based on the approach described below was put into operation in February, 1960. Three principal functions were outlined: (1) To provide an outpatient service for the alcoholic. (2) To provide clinical training for personnel interested in the treatment of alcoholics, and to provide case material for teaching. (3) To stimulate research interest in the field. An approach which utilized medical and psychiatric principles of treatment, combined with social casework, was thought to be the one most likely to be effective and most suitable to our resources. It was felt that there was sufficient scope within this approach to allow the physician to individualize treatment in accordance with the needs of the particular patient.

MEDICAL ASPECTS OF TREATMENT

The physician's over-all treatment plan ought to give recognition to both the physical and the psychological components of this illness. In certain instances, the circumstances may dictate that

more emphasis be placed on the physical aspects of the case, but the psychological components can never be entirely neglected. Most patients conceive of an illness as a physical disturbance which will be treated by the physician along traditional medical or surgical lines. One may find that patients are often quite resistive to the idea that their drinking may be more closely related to an emotional disorder, because for many this implies some personal weakness or disgrace. When such an attitude is detected, the physician should, initially at least, adopt a general medical approach to treatment. The important thing at this stage is to preserve the doctor-patient relationship and the patient's motivation for treatment. The physician, for example, may convey to the patient the idea that his condition is somewhat akin to diabetes. He may tell the patient that he has developed a disorder which will now persist, but that he can live a comfortable and productive life provided that he accepts the need for treatment and accepts some responsibility for refraining from alcohol. Jellinek[8] is of the opinion that some alcoholics cannot abstain, but this is a rather dangerous piece of information to convey to the patient at this time. It may be admitted that the patient is an individual, and as such is different from others, but he should be told that in all probability continued drinking will have the same consequences for him as for others, and that in time he will experience some degree of physical, psychological or social damage unless he quits. It is for the patient to decide what the result will be, for medical treatment will not allow him to drink and escape the consequences.

These statements may cause some patients to express the opinion, or the fear, that for them the prospect of living without alcohol is an impossibility. The physician can reassure them that 350,000 members of Alcoholics Anonymous are doing just this every day. This is an opportune time, moreover, to suggest to the patient that remitted drinkers have found through experience that they can deal with life more efficiently without alcohol, and that their fears of being unable to do so were usually quite exaggerated. Nevertheless, this is hindsight, and there are times when the patient cannot be reassured that he can live without alcohol. In order to overcome this problem, we have found that hospitalizing the patient for a week or two, and controlling his anxiety with tranquilizers, will allow this deadlock to be broken. As a matter of routine, we have endeavored to engage the patient in a discussion of how his drinking habits have interfered with healthy patterns of living. Questions may be asked about his smoking, diet, weight, sleep, digestion, potency, endurance and mood. One is almost certain to find that there have been changes in these areas which will impress upon the patient the illness connotation of alcoholism.

The psychological value of a well conducted physical examination should not be underestimated. A thorough physical work-up can be convincing and reassuring to the patient. It also indicates the doctor's interest in and concern for him as a person who is ill. He is being accepted as a patient, and not as a moral or social deviate. He is being given some reassurance that something can be done for him, and that he, the patient, can contribute enormously to this undertaking by accepting some responsibility for his drinking habits. Any long-term success will depend upon both the doctor's and the patient's goodwill in the treatment procedures.

It is rare to find a patient who has been drinking over a period of years and is not in need of some form of medical attention. Apart from the major complications of alcoholism, careless and unhealthful living habits have almost always produced many restrictive ailments. Reference has already been made to these conditions, and through explanations, diets, medications and other corrective procedures, the general state of the patient's health may be improved. A feeling of physical well being will often generate confidence and pride of achievement in the patient, and will tend to shift his attention away from his worry about having to get along without alcohol.

It can be readily seen that this type of medical approach carries with it strong elements of suggestion and reassurance. These may be reinforced by the doctor's providing the patient regular return appointments. Unexpected rewards for sobriety may be experienced by the patient when he begins to notice the favorable reactions of other persons, and the absence of emotional crises in his relationships with his family and his employers. I am of the opinion that a number of alcoholics are initially resistive to any consideration of their condition as a psychiatric entity. Thus a nonthreatening medical approach is necessary. It is also well known that many alcoholics have strong dependency needs, to which they react with ambivalence. Therefore, they cannot tolerate the close interpersonal relationships that are essential in individual psychotherapy. The patient's condition may be such that his immediate medical needs are of more concern than anything else. For these and many other reasons, accent on a medical approach is desirable in some cases. It should not be used exclusively, and sooner or later the psychiatric and social factors must be taken into consideration.

PSYCHIATRIC ASPECTS OF TREATMENT

Psychiatric aspects of treatment cannot be clearly separated from general medical treatment in actual clinical practice. No greater testimony to the efficiency of alcohol as a tranquilizer can be found than in reference to its traditional and widespread usage for this purpose. For some, however, its use is generalized to such an extent that it becomes an almost singular defense against all varieties of emotional distress. In time, the means employed often become an end in themselves. In

practice, it is important to distinguish between excessive drinking that is symptomatic of a clinical psychiatric entity, and drinking that is not. Drinking may be a feature of hypomania, depression, or some other condition which, in itself, requires specific treatment. The majority of alcoholics, however, do not suffer from these specific nosological entities, and excessive drinking remains as the outstanding feature. The psychological defense against recognition of their alcoholism, as such, may prove to be the greatest impediment to successful treatment.

There are no hard and fast rules for dealing with a poorly motivated patient, but experience with this problem has suggested some approaches that can be profitably made. An otherwise resistive patient may become temporarily—though nonetheless strongly—desirous of sobriety immediately following a bout of acute alcoholism when his physical and psychological discomfort is at a peak. Motivation may develop following a catastrophe in the patient's personal or social life, particularly when the misfortune has been brought about, directly or indirectly, by his drinking, or when a threat to his dependency relationships is involved. The ready availability of treatment at these times can result in permanent rather than temporary abstinence. More frequently than not, these catastrophic circumstances are absent, and the patient is reluctant to consider himself an alcoholic, and is even more reluctant to acknowledge his need for treatment. In such cases, it is quite likely that the patient's opinions in respect to his drinking are governed more by emotion than by reason. Either the fear of having to live his life without alcohol or the fear of being labeled an alcoholic will provide the emotional charge to his thinking.

A number of maneuvers or technics may be tried in dealing with this kind of stalemate. One can endeavor to circumvent the emotional blocks by shifting into a more medical approach, thereby taking the sting from the term *alcoholic*. Although the patient may deny that he is an alcoholic, it is difficult for him to deny that he has some physical complication such as neuritis or gastritis. Since he is frequently in a state of general physical unfitness, he may be brought to accept his need for some form of treatment. Inherent in this therapy is the necessity that he refrain from drinking. Although the patient may not publicly admit his alcoholism, he will often admit that he has a "respectable" illness such as neuritis or gastritis, and that abstinence is one of the conditions necessary for its successful treatment. In this way, a patient may "save face" with his former drinking companions and excuse his shunning their company.

A second method of dealing with the problem consists of undermining the patient's denial system. I have often employed the Jellinek questionnaire for this purpose, for it includes a series of questions in respect to drinking habits, behavior and reactions to alcohol. A large number of positive answers to these questions can be regarded as strongly supporting a diagnosis of alcoholism. The patient is requested to complete the questionnaire, and the physician may then tell him the significance of his answers. He may be told that his pattern of drinking constitutes that which professed and remitted alcoholics regard as alcoholism. The physician, in conveying that information, implies that if the patient undertakes to argue the point, he must oppose the opinions of professed alcoholics. It goes without saying that the doctor should not argue with the patient, since it is presumed that the physician is not himself an alcoholic. Although the Jellinek questionnaire was hardly intended for this use, it can occasionally be so employed.

The significance of being considered an alcoholic will vary with the individual patient. It may imply a lack of moral fiber, a lack of masculinity, a selfish indulgence, or merely an individual difference. For some, acceptance of the diagnosis also means an acceptance of the obligation to refrain from alcohol. In doing so, they take upon themselves a fear of failure and an awareness of a host of other threats. In practically every case, the physician can be sure that such threats exist, even though the patient may go to great lengths to conceal them. The doctor can greatly assist the patient in this regard by doing nothing which would aggravate these complexes. While adopting a warm, non-hostile attitude, he may make reference to the possibility that such problems exist for the patient and tell him that they are by no means insurmountable. The important thing at this stage is to get the patient started on the road to sobriety. Once the individual has experienced some measure of success in his efforts, it is surprising how many of his fears and emotional problems disappear. For the difficulties that remain, it is quite evident that more formal psychotherapy is required.

I believe that it is advantageous to have the patient accept the diagnosis of alcoholism if at all possible. However, the physician ought not to jeopardize the whole treatment situation by insisting on this from the outset. Many a patient will accept the diagnosis at a later date, particularly if, in the meantime, he has had some success with his efforts toward sobriety. On the other hand, the physician cannot compromise with the patient on the issue of abstinence. It must be total abstinence—complete and permanent. Initially, one may have to steer away from the idea of permanency, for it might prove too much of a threat for the patient. But like acceptance of the diagnosis, acceptance of permanent abstinence will often come later.

One of the essentials of success is a healthy doctor-patient relationship that embodies within it a mutual respect. Zwerling[9] believes that direct dealing with the denial system, setting firm limits, and the maintaining of a warm, non-hostile attitude on the part of the physician constitute the most effective psychotherapeutic approach. The

physician may unwittingly and with the best of intentions, destroy these essentials of the doctor-patient relationship. He may, for example, betray his own personal disapproval of drinking by berating the patient's lack of courage and moral fiber. He may be too earnest in his attempts to have the patient recognize the disastrous effects of his drinking upon his family's welfare. There is no one more sensitive to his weakness, to the consequences of his drinking, or to his inability to drink like non-alcoholics than is the patient himself. These sensitivities are often so painful that the patient endeavors to dispose of them through denial or through the oblivion provided by more drinking. If the alcoholic is to accept himself for what he is, he must have some assurance that he is still acceptable to others. The doctor may be the one who has first chance to provide that assurance.

The psychological defenses of the alcoholic are such that some form of psychotherapy is usually indicated. In the setting provided by a good doctor-patient relationship, many of the elements of psychotherapy can always be found. In our program, we have used group psychotherapy chiefly for economic reasons, but also because the results of individual psychotherapy are not very different from those of group psychotherapy.[9] In our opinion, group therapy is particularly suited to the therapeutic needs of these patients. The primary aim can always be kept in focus—namely to help the patient, through group discussion, in finding ways and means of managing his life other than through a dependence upon alcohol. The processes involved in group therapy are so numerous that only a few can be mentioned. Many patients have become so sensitive to failure in their attempts to deal with their drinking problem that they are caught in the dilemma of wishing to overcome it but being unable to face the disappointment of another failure. Brooding on their personal inadequacies, they become afraid of the censure of others, and isolate themselves from their own social class. Emotional sensitivity governs their thinking, which is now replete with rationalization, projection and denial. Through participation in group psychotherapy, they can dispel their sense of isolation. To some extent, they can be relieved of their dependency traits. Through identification with a group with a common purpose, they can regain some measure of objectivity in their thinking. They are respected by the group; they again have achieved some status.

It has been our practice routinely to refer patients who could benefit from some form of group affiliation to the local branch of Alcoholics Anonymous. But it is well known that the program of that organization is suited to the needs of only a certain proportion of alcoholics. For patients who are either unwilling or unable to adopt the AA philosophy, or who need something in addition to it, we have instituted group psychotherapy sessions as a regular part of our outpatient program for alcoholics.

SOCIAL WORK ASPECTS OF TREATMENT

The need and the opportunity for social work in this field are great. If the role of the social worker is clearly defined, and if limits are set upon his responsibilities, then his contribution will be more remarkable. It is essential that the social worker be familiar with the physician's plan of treatment, with the goals that he has set, and with the means that he will employ in trying to attain those goals. Without such planning, the poorly-motivated patient can readily play his therapist and his relatives against each other, and blame further drinking on the failure of the therapist to help him.

At the outset, the social worker will be concerned with the circumstances leading the patient to seek help at this particular time. Has the patient, for example, come at his own desire or because of an ultimatum from his employer, a threat of divorce from his wife, or an order from a court? Does he consider his drinking a problem that he cannot control, or is he unwilling to accept that point of view and determined to prove it false? Has he appeared because "the heat is on," and is he planning only to go through the motions of taking treatment until such time as the pressure is taken off? Sometimes one can detect such motivation in the patient's attitude and behavior. But it does not follow that all these make for a poor prognosis. Motivation will often improve when least expected. It is desirable to have an accurate history of the development of the alcoholism, the pattern and extent of the drinking, the effect it has had upon others, and the circumstances which have tended to promote drinking in this particular individual. Through contact with the patient's relatives and friends, the social worker may obtain the necessary information to clarify these essential points.

Among married couples, the purpose of excessive drinking may be related to problems in their interpersonal relationship. Conflicts in regard to dependency traits, feelings of passivity and suppressed hostility are common in these patients and may be reflected in the drinking behavior. A domineering wife may, for example, unconsciously condone her husband's drinking in order to insure his dependence upon her goodwill and forgiveness. A wife may enjoy the role of the martyr or pseudo-saint. These and many other pathological types of relationship may be encountered.

Through his contacts with relatives, the social worker will often be the one to detect such relationships, and treatment will of course need to take cognizance of these factors. In addition, the social service provides a continuous liaison between the clinic, on the one hand, and the patient's employers, the courts, Alcoholics Anonymous and other agencies, on the other. Much of rehabilitation and the follow-up of patients will

rely heavily on the services of a good social worker.

THE ORGANIZATION AND ADMINISTRATION OF THE CLINIC

The general policies governing the examination and treatment of outpatients at the State Psychopathic Hospital also apply to patients attending the Alcoholic Clinic. Patients are classified according to their financial status as "private," "part-pay," and "state" (no charge). It was decided that the facilities and equipment of the existing outpatient department at the hospital were adequate, and that no special equipment or organization was required. Interested members of the hospital staff were canvassed, and it was found that one staff psychiatrist, a resident psychiatrist and two social workers were prepared to give some of their time to this service. Initially, the Clinic would operate on one day per week, but if necessary the time of operation would be extended. Hospitals, outpatient departments, community agencies, AA groups, police, service clubs and industrial concerns in the Johnson County area were notified of the existence of such a service. The first patients were referred to the Clinic in February, 1960.

SOME RESULTS

It is difficult to evaluate any treatment of alcoholics. It will suffice to mention some of the difficulties that have been encountered. What criteria should be chosen for cure? One of our patients stopped drinking but committed suicide a week later. There certainly is no specific treatment, but a wide variety of "treatments" are said to have caused about one-third of patients to quit drinking at some time or other. It is well known that many patients have quit drinking before reporting for treatment (often just the previous day), and one may ask whether they have done so as a result of their making the appointment. There are few common denominators in these treatment procedures beyond the fact that patients will often attribute their success to some aspect of the treatment procedure. Since alcoholism is a chronic illness characterized by remissions and exacerbations, it is essential that the follow-up of these cases should extend over a period of years. Consequently, we cannot report any long-time results at this stage, but we can report on some of our experiences.

Before this service was initiated, the opinion was expressed by some members of the hospital staff that the demand on the service would greatly exceed our resources. We doubted that prediction, and estimated a case load of 80 patients in the first year. Even though there were many inquiries and appointments scheduled for patients in the first six months, only 30 patients actually reported to the Clinic. In subsequent months, the rate of referral has remained almost constant. We have found, however, that many of our patients will accept this program though they have previously resisted other approaches.

An attempt has been made to evaluate the progress of the first 25 patients, six months after their initial attendance. Seven of that original number are continuing to attend at least once a month, and four patients have attended at least once every three months. Of these 11 regular attenders, five patients have not drunk for six months, five have drunk less, and one patient continues to drink in his customary fashion. Thirteen of the original 25 attended once. Three of these patients have not drunk for six months; four patients have drunk less; and six patients report that they are drinking in their accustomed manner or even worse than before. One patient, as I have said, committed suicide. Therefore, 10 out of the 11 patients who attend the Clinic regularly are either not drinking at all or are drinking less. Seven of the 13 patients who attended but once are drinking less than before.

Only one of the 11 patients who attend regularly has been hospitalized because of a bout of alcoholism. None of the patients have had acute mental disturbances. None have become involved with the police. One patient has lost his job because of continued drinking. Compared with previous experiences in these areas, we think our patients have shown considerable improvement.

Ten patients in this group are married. After six months, five reported that they were getting along better with their wives and families. Four reported some difficulty in their marriages not very different from their previous adjustments. One patient has reported that his relationships with his wife are worse since he reduced his drinking. Seven of the 11 patients report that they are financially better off.

Although no conclusions can be drawn from these figures because the number of patients involved is far too small and the follow-up period has been much too brief, our experiences to date would indicate that this program ought to be given a two-year trial period in order to test its effectiveness. It is our tentative opinion that this type of service is attractive to a certain group of alcoholic patients who have previously been resistive to other forms of treatment.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

The patient was a 42-year-old man who had worked as a farm laborer and in coal mines all of his adult life. He was admitted complaining of diarrhea which had persisted for one month and had amounted to 10-20 stools per day. They were liquid, they contained some mucus and frequently some red blood, and they were followed by cramping pain in the left lower quadrant of the abdomen. During the preceding year, episodes of diarrhea had occurred, lasting three to four days and clearing spontaneously. He ate poorly. He had noted some tenderness in the left lower quadrant of the abdomen. His weight loss was variously estimated as between 20 and 65 lbs. Weakness had kept him in bed during the last four weeks prior to his admission. He had consulted his local physician twice during his present illness and had received some medicine, but it hadn't relieved his diarrhea.

The patient's history revealed that he had been in good health all of his life. One year prior to the present admission, he had been admitted to this hospital for the repair of a traumatic deformity of one hand. His family history and his system review were negative.

The physical examination revealed an acutely ill patient. During his initial examination, he had to use a bed pan several times, and a pink, foul, purulent stool was observed by the examiner. The patient appeared to be comfortable when at rest. The pulse rate was 120/min., the blood pressure was 110/64 mm. Hg, and the respiratory rate varied from 22 to 31 per minute. The rectal temperature was 103.4° F. Expiratory wheezes were heard throughout both lungs. The abdomen was flat and free of scars. The right lower abdomen was exquisitely tender, and a mass seemed to be present in that area. The bowel sounds were not over-active. There was no costovertebral-angle tenderness. The rectum was extremely tender, and an irregular, tender mass (2 x 3 cm.) was found at approximately 8 cm. on the right side. Proctoscopic examination revealed a very hyperemic mucosa. The mass was seen and described as neither fungating nor ulcerated.

The blood hemoglobin was 15 Gm./100 ml., and the white blood cell count was 18,200/cu. mm. A differential white count revealed 70 segmented polys, 5 band polys, 18 lymphocytes, 2 eosinophils and 5 monocytes. The urine specific gravity was 1.021, with a reaction of 5.5, and no albumin, sugar or blood were detected. Examination without contrast medium, at the time of admission and in the X-ray Department, revealed a healthy chest, a mass in the right lower quadrant, and possible large-bowel obstruction. Stool cultures and blood cultures were started on the day of admission. Also on the day of admission, the serum sodium was 129 mEq./L., the potassium 3.7 mEq./L., the chloride 92 mEq./L., and the CO_2 24 mEq./L. The blood urea nitrogen was 9 mg./100 ml., the creatinine 0.6 mg./100 ml., the total protein 6.8 Gm./100 ml., the albumin 3.7 Gm./100 ml., and the globulin 3.1 Gm./100 ml.

The patient's course was a deteriorating one. Some examinations of the stool contents showed forms resembling Endamoeba histolytica. The treatment included, at various times, penicillin, Chloromycetin, neomycin and streptomycin, in addition to emetine, chloroquine and Diodoquin®. No clinical improvement was noted. Two sigmoidoscopic examinations showed changes and lesions compatible with ulcerative colitis, and a biopsy of the areas tended to confirm this impression. His diarrhea, abdominal distention and daily febrile spikes to 103-104° F. continued with little change.

TABLE I

BACTERIOLOGICAL STUDIES

Hospital Day	Specimen	Results
1	Blood	Hemolytic Staphylococcus aureus
1	Blood	Micrococcus species
1	Blood	No growth
1	Stool	Negative for Salmonella and Shigella
3	Stool	Negative for Salmonella and Shigella
4	Blood	No growth
7	Sputum	E. coli normal flora absent
7	Stool	Negative for Salmonella, Shigella and hemolytic Staphylococcus aureus
7	Blood	Micrococcus species
7	Blood	No growth
7	Blood	No growth
7	Urine	No growth
29	Blood	Diphtheroids
29	Stool	Candida albicans
37	Colon mucosa	No Salmonella or Shigella, E. coli grown
37	Liver	E. coli
38	Ulcer from colon	No parasitic forms found
38	Tracheal aspirant	Normal flora (very few)
43	Peritoneal fluid	Proteus vulgaris

He became disoriented, and on one occasion developed muscular rigidity and tremor. Oral intake of food and fluid was essentially unsuccessful, and he was rather exclusively maintained on parenteral fluids from the second through the fourth week of his hospitalization. He received a total of seven blood transfusions.

On his twenty-eighth hospital day, a reevaluation was made by the surgical staff. At that time, it was noted that his liver was enlarged and was palpable three to four fingerbreadths below the costal margin, and that there was tenderness to percussion in that area. No other masses or tendernesses were noted. He had hypoactive but high-pitched bowel sounds. No mass could be found on rectal examination. A repeat sigmoidoscopy revealed pale, boggy mucosa. At 13 cm., an excoriated, shaggy superficial ulceration was noted. A course of ACTH therapy was given, but it was followed by no marked improvement.

A laparotomy was performed on the patient's thirty-fourth hospital day. The right colon was resected, an ileostomy was constructed, and a liver biopsy was obtained. A thorough manual examination of the liver revealed only generalized enlargement. The surgical specimen was reported as showing two ulcers of the cecum and ascending colon, the etiology and pathogenesis of which were obscure. The liver biopsy was reported as showing "congestion of the liver, moderately severe."

Following the operation, the patient appeared to improve somewhat. He developed considerable difficulty with secretions, however, and a tracheotomy was done to facilitate cleansing the respiratory tract. He remained disoriented, but his temperature spikes decreased, and his ileostomy functioned well. Four days after surgery, he was more lethargic, and a generalized coarse tremor was noted. Then he improved, and began to eat and to regain some appetite. He developed a complicating collection of fluid in his operative wound, and when it was drained, a small fascial defect was noted. The progress notes indicate that he was improving throughout the next three days, but then he was found dead in bed on his forty-fifth hospital or tenth postoperative day.

A myriad of laboratory examinations were performed during his hospital stay, and the results are recorded in Tables 2 and 3.

TABLE 2

HEMOGLOBIN MEASUREMENTS AND WHITE BLOOD CELL COUNTS

Hospital Day	Hemoglobin (Gm. Per Cent)	White Blood Cells Per cu. mm.
1	15	18,200
3	14.5	10,500
10	11.4	6,600
13	12.1	5,500
20	9.0	5,600
24	11.5	18,700
27	8.8	14,400
28	10.0	
35	13.5	12,350
36	14.3	7,800
39	14.2	11,400

SUMMARY OF CLINICAL DISCUSSION

*Dr. Edwin J. Pulaski (Col., MC), chief of the Department of Surgery, Watson Army Hospital, Fort Dix, New Jersey:** It seems to me that this patient's disease must belong in one of two categories—malignancies and infections of the colon. At the very outset, I think we can say with certainty that although malignancy was a good diagnostic possibility during the early phases of the patient's evaluation, subsequent events tended to rule it out. By this I refer to the radiologic diagnostic studies and the proctoscopic findings, as

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TABLE 3

RESULTS OF OTHER LABORATORY TESTS

Hospital Day	Na	K	CO_2	Cl	Ca	P	BUN	Creat.	Urine Fantus
1	131	4.6	24.9	90			12	0.9	
3	129	3.7	24.1	92				0.6	
4	130	3.8	25.2	104			10	0.7	
7	137	9.5	31.6	94					
8	130	3.0	23.5	92	7.6	1.6			
9	131	4.6	31	83					
12	136	4.0	31.5	86	6.7	1.9			
13	127	3.1	34.3	84	7.7	2.2			4 Gm./L.
19	138	4.2	34.0	88	10	3.1	9	0.9	12 Gm./L.
24	138	4.4	30.0	91	7.7	4.8			12 Gm./L.
27	135	3.4	21.7	87	7.8	3.8	5	0.5	11 Gm./L.
35	144	3.4	31.2	96			15	0.6	
39	143	3.3		107					

well as the patient's clinical course. If I am right in thinking that neoplasia was not the basic problem in this patient, then one must assume that he had an infection, and the specific etiology of his illness must be one or a combination of these three—bacterial, acid-fast or parasitic.

The protocol gives us some insight into these three possibilities. First, we are told that he had been a farmer all of his life. This fact immediately suggests the possibility of bovine tuberculosis. However, knowing that Iowa leads the nation in the elimination of tuberculous cattle from herds, to the point of virtual eradication, the likelihood of bovine tuberculosis in this patient is extremely remote. Pulmonary tuberculosis and a secondary intestinal involvement could be a possibility, but we are told in the protocol that a chest roentgenogram of good quality was obtained, and that it showed no evidence of lung parenchymal disease.

Actinomycosis is the next possibility, and conceivably it could have been the infectious agent, but in the abdominal form it is predominantly, though not exclusively, associated with fistulae. There is no suggestion of this in the protocol. The patient was subjected to multiple chemotherapeutic agents, the duration and dosages of which are unstated, but without lasting benefit. I assume that the antibiotics that were given him would have been sufficient to produce some amelioration if the disease had been, in fact, actinomycosis. I doubt, therefore, that actinomycosis due to Actinomyces bovis was the cause of this man's disease.

Another possibility is infection due to Histoplasma capsulatum because it may involve the appendix and cecum. I think we can rule out histoplasmosis on the grounds that the tenderness and a questionable mass in the right lower quadrant disappeared following the use of drugs that are known to be ineffective in the treatment of histoplasmosis.

We certainly must think of regional enteritis, diverticulitis and non-specific ulcerative colitis as possibilities in this patient. But the disappearance of the intra-abdominal mass and tenderness, without concomitant clinical improvement, makes these entities unlikely diagnoses. Laparotomy, and the attendant direct inspection and palpation of the small and large bowel, may be considered definitive diagnostic evidence for ruling out regional enteritis, diverticulitis and non-specific regional colitis. Certainly, the gross changes noted in the colon were incompatible with ulcerative colitis. One might hypothesize that the four or five days of therapy with corticosteroids could have produced dramatic resolution of the gross pathology of ulcerative colitis, however.

The last diagnostic possibility that I would like to entertain is amebiasis. Endamoebae hystolytica were found in the patient's stools. Certainly the clinicians favored this hypothesis, for we note that he was given emetine, Diodoquin and some of the anti-infective drugs that have at least an indirect effect on Endamoeba hystolytica in the colon. A significant piece of evidence, then, is that these organisms were found in the stools. Also, I think it is significant that the granulomatous lesions initially noted on proctosigmoidoscopy disappeared, and that there was a subsequent endoscopic demonstration of ulceration. The ulcerations were confirmed on examination of the surgical specimen. Although none of the trophozoites were found in the specimen, I have a feeling that those who are to comment later will have a great deal to say about how notoriously elusive these parasites are in a markedly superinfected colon.

The history of transient diarrhea a year prior to admission could, if I am correct, have represented the onset of amebic colitis, one that afterwards subsided. Characteristically, in this disease, variable periods of quiescence occur, lasting weeks, months or years. Exacerbations, when they occur, are manifested by foul, bloody, purulent diarrhea together with fever and abdominal pain, and this pain is predominantly over the ileocecal area. The putrid character of this patient's stools fits this picture, as do the fever, the prostration and the dehydration. Recurrences, in turn, frequently are associated with superinfection, and this man certainly had superinfection, as reflected by reports of several blood cultures, taken at various times, which yielded more than one bacterial species.

Whereas the colon is the primary seat of amebiasis, a spread to other organs can occur, with systemic infection. Amebae may spread by way of the lymphatics or portal vein, and wherever these organisms are carried, they produce lesions similar to those in the colonic mucosa.

The liver is the most frequent extra-colonic site of involvement. We have read in the protocol that the liver was felt to be enlarged and tender at one time or another, suggesting amebic infestation from the colon. What the amebae do on reaching the liver is to degenerate and produce thrombosis of the blood vessels and/or necrosis with or without the formation of abscesses. When abscesses do not form, the amebae produce congestion of the liver, with ultimate scarring of peri-portal tissue. This phase is called "pre-suppurative amebic hepatitis." If infection is superimposed, hepatic abscesses occur. Hematogenous dissemination to the lung may take place by way of the hepatic vein, although this is rare. Direct rupture of an abscess located in the upper portion of the right lobe of the liver may occur into the lung, and the patient may then run a course characterized first by the formation of a bronchiectatic fistula and then by the raising of copious sputum. The sputum may be positive for amebae. Less commonly, there can be involvement of the brain or nervous tissue, with liquefaction of nervous tissue and hemorrhage. Meningeal involvement does not occur. Some patients experience only headache, but others have convulsions, delirium, localizing neurologic signs, etc. Death frequently occurs following rupture of the abscess into the ventricles.

Salt-wasting is characteristic of amebic colitis.

In the protocol we note that there was a marked loss of salt in the urine, with a persisting dislocation of blood serum electrolytes. The urinary loss of chlorides, and inferentially of sodium, contributed substantially to the problem of management in this patient before, during and after his operation. My diagnosis, then, is amebic colitis with lethal superinfection.

Dr. Lyndon E. Lee, Jr., coordinator, research in surgery, and chief, Extra-VA Research Division, Veterans Administration, Washington, D. C.: For purposes of provoking discussion, I wish to disagree with the thought that this may have been a case of amebic dysentery.

The patient, apparently, was a previously healthy farmer-miner who was experiencing a year of intermittent diarrhea. He came to the hospital following a month of abdominal cramps, diarrhea with blood and mucus, abdominal tenderness, weakness, and weight loss of anywhere from 20 to 65 lbs. On admission he had persistent diarrhea, evidences of infection and a rectal mass.

I am interested in that mass. While he was under study and on a supportive regimen, mostly parenteral, he showed gradual deterioration. Apparently there was major resectional surgery, performed perhaps in desperation, then the patient experienced some transient improvement, and then he died.

There are a great many questions that we might pose. First, had this man visited any of the other parts of the world—in military service, for example? If so, we might have to consider schistosomiasis mansoni, among other things. Schistosoma or bilharzia could, in fact, fit here, though not too well. Also, I think it would be desirable to know, in order to support or rule out a thesis which I shall present to you, whether or not the man had any evidences of ilio-psoas, lumbar or sciatic pain. In other words, did he show evidences of psoas abscess. I'll not force any review of this record, but this is a point of some interest. His hemoconcentration and toxicity, as Dr. Pulaski has so well pointed out, are problems that go with infection. We shall remain fairly close to infection, but there is a differential that we need to go into.

Let's ask our radiologist about possible rib or vertebral erosion, for it might or might not be present in the disease which I have in mind. Also, may we know whether there were any small-intestine patterns available?

Dr. Carl L. Gillies, Radiology: A flat film of the abdomen demonstrated a considerable amount of gas in the large and small bowels. I think the diagnosis of a mass in the right lower quadrant is open to question, but the radiologist should try to rule in or rule out the possibility of an appendiceal abscess.

The second film, which was obtained the day after the flat film, was an attempted barium enema which was unsuccessful because of the large quantities of gas. No obstruction was encountered, but the entire colon could not be filled. The rectum and sigmoid were filled, and they were small in diameter and smooth in outline.

The descending colon was thought to be negative. The diagnosis submitted said: "findings compatible with ulcerative colitis." The last film obtained of the chest and abdomen did report enlargement of the liver. In the first film, the liver shadow was essentially normal, but in the last film, taken a month later, it was tremendously enlarged.

So, our positive findings were changes in the descending and sigmoid colon compatible with ulcerative colitis, and a greatly enlarged liver which had developed during the patient's month-long stay in this hospital.

Dr. Lee: It seems that there was a mass found initially at rectal examination, but not recorded in detail. Masses are tangible things, and generally have size, shape and consistency. They have tenderness or a lack of it, and they may or may not be attached to surrounding structures. These points of information from that original examination might be pertinent.

The actual differential diagnosis is that of diarrhea, but we don't want to go into that without direct reference to our patient, a 42-year-old farmer-miner. Let us mention the *congenital problems* of duplicated bowel, malrotation, diverticulosis and all other such things, in order to cross them off. He had a history of *trauma* to the hand, and the wound in that area might have provided entry for some infectious agent, but with the limited details available to us, our speculation on that possibility involves reaching pretty far. Thus, trauma must be excluded from consideration. *Infection,* we shall come back to. *Neoplasm* might be considered, but carcinoma of the right bowel in this relatively young farmer-miner would have been less likely than other problems, particularly in view of his course. His disease doesn't really quite follow the pattern of carcinoma developing in the right bowel.

As regards neoplasm, I have seen Hodgkins disease in the right bowel—in the terminal ilium and into the cecum—undiagnosed until we operated upon the patient. As a matter of fact, having resected one with only moderate success, we were wise enough in the next cases to recognize possible Hodgkins disease. Biopsy was done, and the patients were treated with radiation rather than surgery. Here, we cannot rule out Hodgkins disease or—if you prefer the more general term—lymphoma. It is the most probable neoplasm in this case, unless you prefer carcinoid. I trust the pathologist had every opportunity to recognize or rule out carcinoid. We shall exclude it from our discussion as a remote possibility.

Those of us who have spent some time in the tropics might be concerned about the possibility of sprue in this patient. That is why I asked about small-bowel pattern on x-ray. Sprue is a poor choice, but I'm running through a differential

diagnosis, and touching sprue as a *nutritional* possibility.

We have now excluded congenital, traumatic and nutritional possibilities. Neoplasia remains a consideration. Let us hold infection aside for a moment and touch upon psychogenic problems. Ileitis and colitis are among things discussed by Dr. Pulaski, and I agree with him on this point.

We have, then, the problems of infection. Although I am immediately interested in amebic dysentery, I have agreed to disagree so that I may discuss additional entities. The other granulomatous possibilities are syphilis and tuberculosis. Lues is unlikely these days, particularly unrecognized lues, and it seldom involves the right colon. Its site is much more often the stomach. In this country tuberculosis of the bowel is predominantly found in those individuals who also have widespread pulmonary tuberculosis. Tuberculosis bovis, some of us have seen in the bowel, particularly where bones of the pelvis are also involved. Tuberculosis does not seem likely here. We can, if you wish, touch upon lymphopathia venereum. Frei's antigen would have been available and would have been tried. This disease is usually in the left bowel, rather than in the right, and with obvious rectal and lymphatic involvement. Appendicitis is a disease that hasn't been mentioned. I put it among the infections, recognizing its obstructive origins and its possible later development into peritonitis with perforation. This was not the course in today's patient.

I don't know about the rabbits in this area. On occasion we see tularemia in Southern United States, and I suggest it to you in order that you may rule it out. The history of hand trauma is suggestive, but we have no details. Cross it off.

We are then left with: amebic dysentery, about which I have agreed to disagree; tuberculosis—not a reasonable course of development; carcinoma—not quite the proper circumstances here; Hodgkins—a definite possibility, but less likely than ileitis, enteritis and colitis because of its course of development. Therefore, I have crossed off all of my possibilities.

Perhaps we had better reexamine the world and see whether there isn't another possibility. I honestly think that there is, and I should like to present it for your consideration.

In 1877, Harz described an organism which had been found by Bollinger in cattle. It is an infective agent, not contagious. Though relatively common in cattle, it is occasionally seen in horses. It is said to be found only rarely in man, but its rarity may be a consequence of the infrequency with which it is considered. Most cases in the United States are seen in the upper Mississippi Valley and in the northwestern states, possibly thanks to your alert laboratory men.

The organism that I have in mind is gram positive. It is a filamentous fungus; partially anaerobic; marked in secretions by branching filaments of diphtheroid forms, although in detailed studies there are some coccoid elements. Animal infection in the laboratory is next to impossible with one inoculation and is difficult with multiple inoculations, and diagnosis is therefore unreliable. In man, it seems to be introduced into the body as a contaminant occasionally riding on foreign bodies. On occasion in granulomatous tumors which may develop, the foreign body is actually present.

About 60 per cent of these infections are cervicofacial, located in tissues of the jaw and face. There is first a tumefaction without much evidence of inflammation. I remind you now of the mass which should have had size, shape, consistency, etc. In this disease, bowel involvement and a mass may be found on rectal examination. In any portion of the body, these masses eventually develop multiple abscesses. They then develop sinuses and are exceedingly awkward for the patient and difficult to treat. About 15 per cent of cases in the United States are reported in the thoracic area, with pulmonary or empyema problems or thoracic cage involvement. Again, they are characterized by sinuses which continue to drain a peculiar pus.

In 20 per cent of cases found in the abdominal area; they are of the acute appendiceal form, which is occasional, and the more usual kind of case like the one under consideration here. The rare gastric granuloma does not exist as a possibility here. This is in the right bowel, originating in the cecum, as do most of the abdominal cases. The disease advances by direct extension. There is continuity in the submucosa, and our histologist will probably distinguish this from ulcerative colitis, which is dominantly in the mucosa.

Occasionally this may rupture into systemic veins, causing metastases in the brain and heart, less frequently in the liver and spleen, and sometimes in the ovary. Surprisingly, the lymphatic system seems to have some sort of resistance or an immunity to it. Pus develops in the lesions. It is a thin material, sometimes bloody, and contains peculiar yellow granules. The initial involvement is an indurated mass, in the abdominal cases slightly painful, but it lacks real inflammatory signs. The surgeon opening the mass or abscess has the best chance of finding characteristic granules in the thin, bloody discharge, the *sine qua non* of diagnosis.

I call your attention to the fact that following operation our man had a collection of serum and a fascial defect in his abdominal wall, coming some days after his surgery. This also is quite characteristic, especially if it was a fecal fistula.

Occasionally, surgical resection is a successful treatment in these people. The cervico-facial group has been treated in a variety of ways. Thymol has been used, with incision and drainage of the abscesses. The iodides have been employed. Some of the sulfonamides have been used. Lately, antibiotics (penicillin, Aureomycin, Terramycin) have

been used. These things are of help in the cervicofacial area. The thoracic and the abdominal involvements, the rare gastric and the right colon with which we are faced today, do not show good response. The prognosis is very grave.

This patient probably was suffering from the Ray fungus infection or actinomycosis. I submit it as my diagnosis.

Dr. Emory D. Warner, Pathology: The major findings in this case at the time of autopsy were those of chronic ulcerative inflammation of the remaining colon, a huge abscess of the liver, peritonitis which did not appear severe, and bilateral pneumonia.

There seems to be some confusion about the duration of this man's symptoms. The clinical data submitted to us with the resected colon indicated that he had had intermittent diarrhea for 10 years, rather than just one. Thus, apparently he was not a good historian and gave us different stories from time to time.

The resected colon did show a large ulcer in the cecum, and a second rather large ulcer some 25 to 30 cm. distal to the cecum. These were transverse ulcers. They were not undermined, nor was there any suggestion of tunneling beneath the tunica propria as in the classic amebic ulcer.

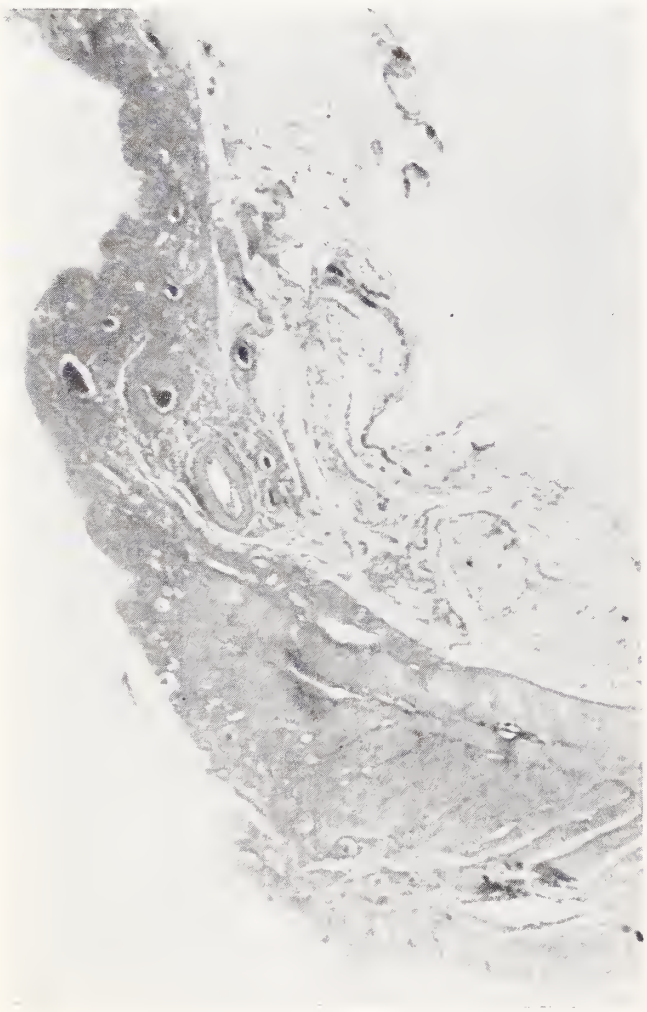

Figure 1. Chronic ulcer of ascending colon.

They had been there long enough to have resulted in considerable scarring. The bowel, unlike that in so-called idiopathic ulcerative colitis, was rather normal between the ulcers. Thus, there were two major ulcers of the proximal colon, rather than diffuse involvement of the colon.

At the time of autopsy, the remaining large bowel was extensively involved, as was indicated by the x-ray studies. In the proximal sigmoid and descending colon, the ulcers were transverse. They, again, were saucered and scarred, rather than undermined, with overhanging margins. There were no flask-shaped ulcers. In the distal sigmoid and rectum, the bowel was rather diffusely scarred. The ulcers tended to be linear, with intervening polypoid mucosa, and grossly the changes were similar to those of ulcerative colitis.

It was difficult to be certain how big the liver was. It was densely fused to the diaphragm. There was a huge abscess which pointed postero-superiorly on the right lobe, where it would have been essentially impossible either to see or to feel it during the exploratory laparotomy. From the character of the abscess wall, I'm sure that some of that abscess was there at the time of the exploration. I don't really know how large the abscess was, for there was also thrombosis of a major branch of the right hepatic artery, and as a result there was massive infarction in the right lobe of the liver. In addition, there was infection of the infarcted liver. The resultant suppuration due to the hemolytic staphylococcus infection further confused the extent of the original more chonic abscess. The liver weighed 2,600 Gm., and in addition, an estimated 2,000-3,000 ml. of necrotic debris and pus was spilled out in the process of removing the liver from the body. There were vestiges of a more chronic abscess wall, and thus I think that the patient had a chronic liver abscess, but its size could not be determined at that time.

There was a fairly extensive bilateral pneumonia at the time of death. This appeared to be rather recent.

Figure 1 is a section of one of the chronic ulcers from the resected ascending colon. At the bottom you note essentially normal bowel, with normal muscularis, normal mucous membrane and submucosa. The ulceration goes through the mucosa, submucosa and muscularis. The base of the ulcer actually is granulation tissue.

Stains failed to demonstrate any amebae in the sections of the colon which had been resected prior to death.

The next section shows an ulcer which almost approached a flask-like shape. This ulcer was in the descending colon at the time of autopsy. A number of ameba-like cells were found in the necrotic tissue in the depths of some of these ulcers (Figure 2). These were rather badly degenerated and cannot be unequivocally identified as ameba histolytica. They are certainly suggestive of Endamoeba histolytica, but we were left without unequivocal proof of amebic dysentery.

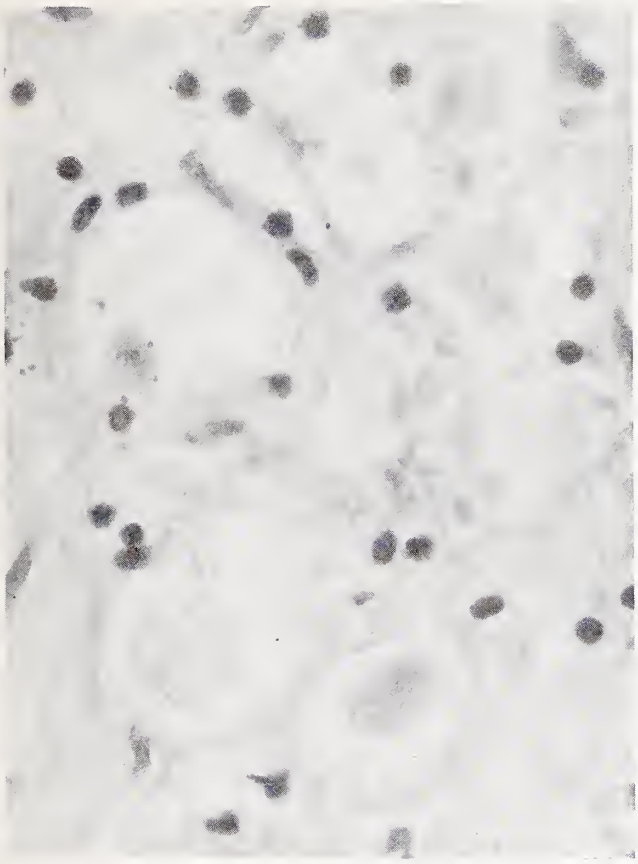

Figure 2. A number of ameba-like cells were found in the necrotic tissue in some of these ulcers. One of the ulcers approached being of flask-like shape. It was in the descending colon at the time of autopsy.

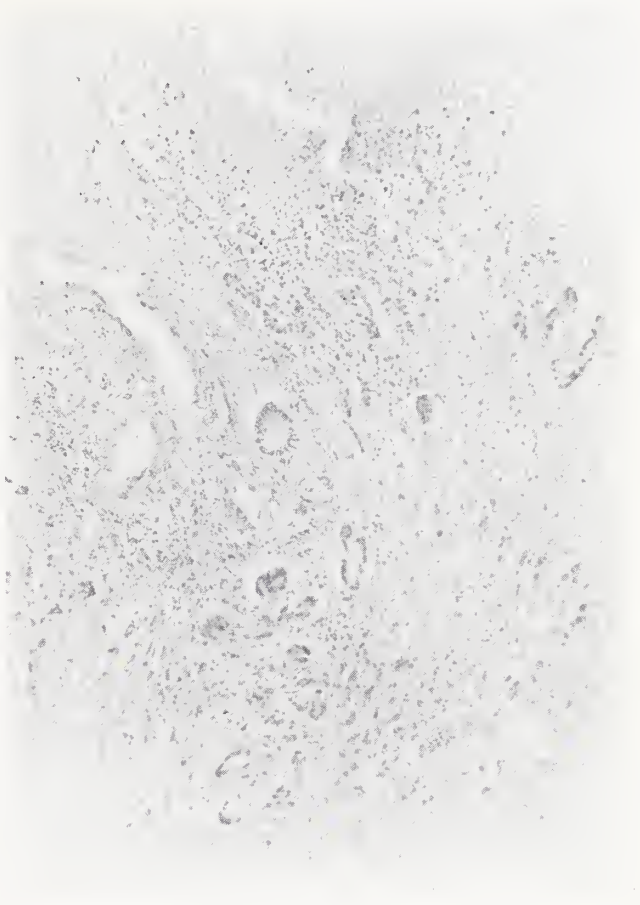

Figure 3. Edge of hepatic abscess. Note scarring.

This section is the edge of the sloughing liver abscess. Here, there is some fibrosis, but not as extensive at this point as in other areas. Here can be seen a little bit of the viable liver outside the abscess.

Figure 3 is the wall of the abscess. You see more scarring, with bile duct proliferation. This had been present for a longer time.

The next section shows what much of the right lobe of the liver was like. There was massive infarction, with sloughing of the necrotic liver tissue into the pus in the abscess.

Figure 4 shows acute pneumonia, with the granular eosinophilic precipitate of the protein in edema fluid, and shows leukocytes, including many large mononuclears. In other areas there was more advanced pneumonia, with myriads of neutrophils, and some areas in which alveolar walls were beginning to break down. Had this gone on a little longer, there would have been lung-abscess formation as a complication of the pneumonia.

The bacteria recovered at postmortem were, as you would have suspected, mixed. A pseudomonas and a proteus were cultured from the lung. There were staphylococci and proteus, and I believe also pseudomonas, in the liver. The spleen culture yielded a hemolytic staphylococcus.

We are left, then, with the anatomical diagnosis of an ulcerative inflammation of the bowel which, I think, is probably amebic dysentery complicated by the liver abscess, which in turn is further complicated by massive liver infarction and secondary infection. Pneumonia was a terminal event.

Dr. Irving H. Borts, State Hygienic (Bacteriological) Laboratory: The only comments I would like to make are that early in this man's history he did have something that could be compatible with early amebic dysentery. The character of the stools at the time of his entrance into the hospital —that is, foul-smelling stools—is not encountered in early amebic dysentery, but is compatible with chronic amebiasis and secondary infection. The lesion in the bowel could have been one of amebiasis that rapidly resolved as a result of antiamebic therapy. The forms that were found in the bowel tissue sections were suggestive of E. histolytica or some other species of ameba. However, they were so degenerated that definitive nuclear structures couldn't be seen, and they are essential in the making of an unquestionable diagnosis.

Dr. Irvin S. Snyder, Bacteriology: Because of the large number of different bacteria isolated, little information can be obtained from the bacteriological studies with respect to implication of a bacterium as the etiologic agent of this disease. However, several factors may help explain the isolation of these varied bacterial organisms. This patient had a nutritional deficiency, as was evi-

for inflammatory

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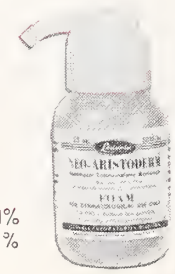

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The anti-inflammatory and antipruritic efficacy of triamcinolone acetonide was shown by the prompt control of itching and resolution of affected areas. Cahn, M. M., and Levy, E. J.: A Comparison of Topical Corticosteroids: Triamcinolone Acetonide, Prednisolone, Fluorometholone, and Hydrocortisone.

Antibiotic Med. & Clin. Ther. 6:734 [Dec.] 1959.

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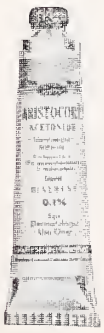

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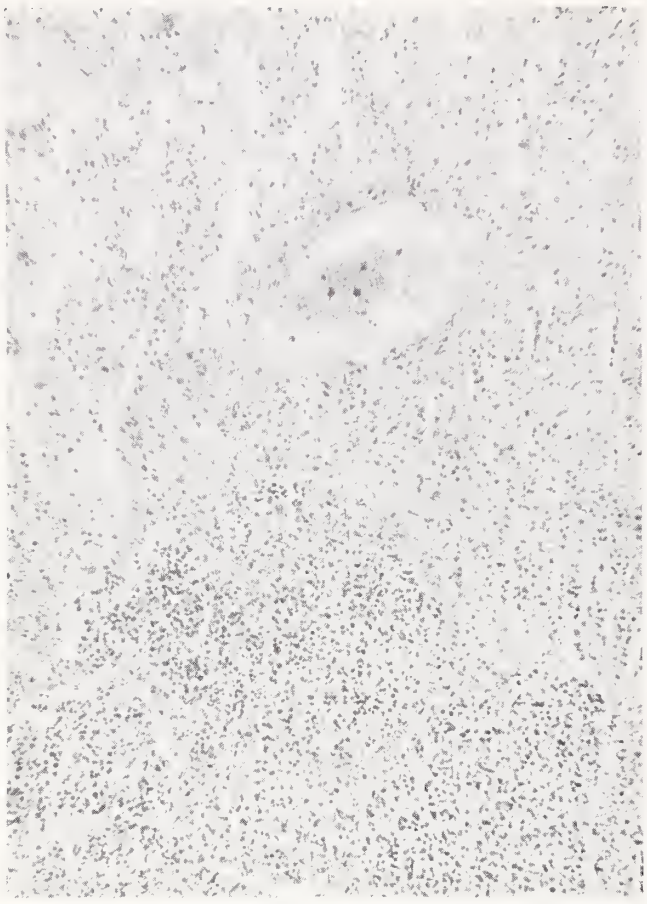

Figure 4. Lung. Acute pneumonia.

denced by his weight loss. In addition, he received extensive antibiotic therapy. Last, it has been suggested that he had either a neoplasia or an amebic or actinomycotic infection. These factors permit one to regard the bacteria isolated as secondary invaders or so-called opportunists. I think this is a good case in connection with which to recall one of the things taught in basic bacteriology—the phenomenon of opportunism, a subject of increasing importance in medicine and medical bacteriology.

SUMMARY OF NECROPSY FINDINGS

The major findings were those of chronic ulcerative inflammation of the colon, and liver abscesses complicated by recent bacterial infection, with hepatic artery thrombosis, peritonitis and pneumonia.

The liver abscess projected posterosuperiorly in the right lobe of the liver, and the right leaf of the diaphragm was elevated to the level of the second rib. The abscess was complicated by hepatic arterial thrombosis, with recent infarction and staphylococcal infection, but appeared in part to have been of considerable duration. Unequivocal demonstration of E. histolytica in the lesions was not accomplished. In view of the extensive postmortem degeneration incident to the long period between death and autopsy (45 hrs.), this failure is not thought to rule out amebic dysentery. The ulcers in the bowel, although atypical, were consistent with this diagnosis. Amebae were present in the stools on at least one occasion. Degenerating amebae, not identifiable as E. histolytica, were found in the chronic ulcers in the colon at autopsy. The persistent colitis with ulceration, the presence of degenerating amebae in the bowel lesions and the occurrence of the large hepatic abscess combine to make a diagnosis of amebic dysentery probable. The bacterial infection (Pseudomonas aeruginosa, hemolytic Staphylococcus aureus, Proteus vulgaris) is considered to have been terminal in a debilitated patient.

ANATOMIC DIAGNOSES

Chronic ulcerative inflammation of colon (amebic dysentery)

Hepatic abscess, amebic, with superimposed infarction and bacterial infection

Thrombosis of right hepatic artery

Postoperative colectomy with wound dehiscence

Bronchopneumonia, bilateral

Septicemia.

CLINICAL SYMPOSIUM ON PAIN AND ITS TREATMENT
At S.U.I., April 14

The Departments of Neurology, Neurosurgery and Orthopedic Surgery at the S.U.I. College of Medicine will present a Clinical Symposium on Pain and Its Treatment, in Iowa City on April 14, 1961. The guest speaker will be James L. O'Leary, M.D., of the Washington University School of Medicine, St. Louis, and the registration fee will be $10. Advance enrollments are requested.

The program will be as follows:

8:30 a.m. Registration

9:00 a.m. "Headache—Its Mechanisms and Treatment"—A. L. Sahs, M.D.

9:30 a.m. "A Neurosurgeon's Thoughts on Pain, Especially Facial Pain"—Russell Meyers, M.D.

10:00 a.m. "Musculoskeletal Pain Mechanisms—the Neck and Arm"—Carroll B. Larson, M.D.

10:45 a.m. "The Physiology of Pain"—Dr. O'Leary

11:30 a.m. Open Discussion, With Questions From the Audience
Drs. Sahs, Larson, Meyers and O'Leary

1:30 p.m. "Problems in Management of Radicular Pain"—M. W. VanAllen, M.D.

2:00 p.m. "The Orthopedic Aspects of Back and Hip Pain"—I. V. Ponseti, M.D.

2:30 p.m. "Pain Arising From Lesions of the Spinal Cord and Its Coverings"—G. E. Perret, M.D.

3:15 p.m. "Pharmacologic Agents Applied to the Treatment of Problematic Pain"—L. J. DeBacker, M.D.

4:00 p.m. Open Discussion, With Questions From the Audience
Drs. VanAllen, Perret, Ponseti and DeBacker

4:45 p.m. Concluding Remarks—Dr. Sahs

Coming Meetings

In State

April 7-8 **Raymond Blank Memorial Hospital Association Pediatric Conference.** Younker Memorial Rehabilitation Center, Iowa Methodist Hospital, Des Moines

April 12 **Pain and Its Treatment.** SUI College of Medicine, Iowa City

April 23-26 **Iowa State Medical Society Annual Meeting.** Veterans Auditorium, Des Moines

Out of State

April 3-8 **Thirty-Fourth Annual Spring Congress (Gill Memorial Eye, Ear and Throat Hospital and the Elbyrne G. Gill Eye and Ear Foundation).** Patrick Henry Hotel, Roanoke, Virginia

April 3-15 **Bahamas Medical Conference.** Nassau, Bahamas

April 6-8 **American College of Surgeons, Section Meeting.** Fort Gary Hotel, Winnipeg, Manitoba

April 6-8 **Fourteenth Annual Spring Meeting, West Virginia Academy of Ophthalmology and Otolaryngology.** Greenbrier Hotel, White Sulphur Springs, West Virginia

April 7-9 **Management of Pain by Therapeutic Nerve Block.** Harbor Hospital, University of California at Los Angeles

April 8-9 **Southwestern Society of Nuclear Medicine.** Ramada Inn, Oklahoma City, Oklahoma

April 9 **Problems in Therapy of Cardiac Disease.** Presbyterian Medical Center, San Francisco

April 9-11 **Southwest Allergy Forum.** Sea Island Hotel, Padre Island, On the Gulf, Texas

April 9-12 **Tennessee State Medical Association.** Read House Hotel, Chattanooga

April 9-13 **International Anesthesia Research Society.** Houston, Texas

April 10-12 **Clinical Reviews.** Mayo Clinic and Mayo Foundation, Rochester

April 10-12 **American Academy of Pediatrics.** Sheraton-Park Hotel, Washington, D. C.

April 10-12 **Otorhinolaryngology.** University of Kansas Medical Center, Kansas City

April 10-13 **Southwestern Surgical Congress** (AMA members only). St. Louis

April 10-13 **Ohio State Medical Association.** Netherland-Hilton Hotel, Cincinnati

April 10-14 **American Physiological Society.** Atlantic City

April 10-14 **American Society of Biological Chemists, Inc.** Atlantic City

April 10-14 **American Society for Experimental Pathology.** Atlantic City

April 10-14 **Postgraduate Course on Oral Pathology.** Armed Forces Institute of Pathology, Washington, D. C.

April 10-15 **Thirty-Fourth Annual Spring Congress in Ophthalmology and Otolaryngology and Allied Specialties.** Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia

April 10-22 **Gynecology, Office & Operative.** Cook County Graduate School of Medicine, Chicago

April 11-13 **Industrial Medical Association.** Biltmore Hotel, Los Angeles

April 11-14 **Problems of Growth and Aging (American College of Physicians).** The Lankenau Hospital Auditorium, Philadelphia

April 12-14 **Ophthalmology.** University of Kansas Medical Center, Kansas City

April 13-14 **Twelfth Annual Venereal Disease Symposium (American Venereal Disease Association and the Public Health Service).** Hotel New Yorker, New York City

April 13-15 **American Association of Railway Surgeons.** Drake Hotel, Chicago

April 13-20 **American Academy of General Practice.** Miami Beach, Florida

April 14-15 **Regional Medicolegal Symposium (American Medical Association).** Kentucky Hotel, Louisville

April 16 **Central Regional Meeting, American College of Gastroenterology.** Schroeder Hotel, Milwaukee

April 16-19 **Arkansas Medical Society.** Hotel Marion and Robinson Auditorium, Little Rock

April 16-20 **American Society of Maxillofacial Surgeons.** Barbizon-Plaza, New York City

April 17-18 **Pediatrics.** University of Nebraska, Omaha

April 17-19 **Anesthesiology.** University of Kansas Medical Center, Kansas City

April 17-19 **Internal Medicine for Internists.** Center for Continuation Study, University of Minnesota, Minneapolis

April 17-20 **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago

April 17-21 **Gynecological Endocrinology.** New York University Medical Center, New York City

April 17-22 **Electrocardiography and Heart Disease.** Cook County Graduate School of Medicine, Chicago

April 17-22 **Surgery of the Hand.** Cook County Graduate School of Medicine, Chicago

April 17-28 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago

April 17-28 **Urology.** Cook County Graduate School of Medicine, Chicago

April 18 **The Neurological Examination (Sixth in the series "General Medicine and Surgery").** The Southeast Kansas Tuberculosis Hospital, Chanute, Kansas

April 18 **The Use of X-Ray in Evaluating the Emergency Pediatric Patient (Eighth in the series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri

April 18-25 **North American Clinical Dermatologic Society, Inc.** Dorado Beach Hotel, Dorado Beach, Puerto Rico

April 19-22 **Fifth Postgraduate Course on Fractures and Other Trauma (Chicago Committee on Trauma of the American College of Surgeons).** John B. Murphy Memorial Auditorium, Chicago

April 20 **The Thyroid (Sixth in the series "Medicine and the Family Physician").** University of Kansas School of Medicine, Battenfeld Auditorium, Kansas City

April 20-21 **Cardiac Auscultation.** University of Kansas Medical Center, Kansas City

April 20-22 **Otolaryngology for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis

April 20-28 **Israel—Clinical Postgraduate Program (UCLA).** Jerusalem and Tel-Aviv

April 21-23 **American Society for the Study of Sterility.** The Americana, Bal Harbour, Miami Beach

April 21-28 **American College of Obstetricians and Gynecologists.** Americana Hotel, Miami Beach, Florida

April 22-25 **Texas Medical Association.** Galvez and Buccaneer Hotels, Galveston

April 23-27 **Society for American Bacteriologists.** Morrison Hotel, Chicago

April 23-28 **Course on Nursing Aspects of Health Mobilization (USPHS and Office of Civil Defense Mobilization).** OCDM Staff College, Battle Creek, Michigan

April 23-28 **Course on Environmental Health Aspects of Health Mobilization (USPHS and Office of Civil Defense Mobilization).** OCDM Staff College, Battle Creek, Michigan

April 24-26 **Aerospace Medical Association.** Chicago

April 24-26 **American Association for Thoracic Surgery.** Sheraton Hotel, Philadelphia

April 24-26 **International Academy of Pathology, Annual Meeting.** Chicago

April 24-27 **Aerospace Medical Association Annual Meeting.** Palmer House, Chicago

April 24-28 **Ophthalmoscopy.** New York University Medical Center, New York City

April 24-28	**Histopathology in Ophthalmology.** New York University Medical Center, New York City
April 25-27	**South Carolina Medical Association.** Francis Marion Hotel, Charleston
April 26-28	**American Association of Pathologists and Bacteriologists.** Chicago
April 26-28	**Medical and Chirurgical Faculty of the State of Maryland.** The Alcazar, Baltimore
April 26-29	**American College Health Association.** Detroit
April 27-28	**Eastern States Health Education Conference.** New York Academy of Medicine, New York City
April 27-28	**Southwestern Conference on Diseases in Nature Transmissible to Man.** Memorial Student Center, Agricultural and Mechanical College of Texas, College Station, Texas
April 27-29	**Medical Association of the State of Alabama.** Hotel Stafford, Tuscaloosa
April 27-29	**American Academy of Neurology** (members and guests). Sheraton-Cadillac Hotel, Detroit
April 28-29	**Regional Medicolegal Symposium (American Medical Association).** Statler-Hilton Hotel, New York City
April 28-29	**Institute on Alcohol Intoxication.** Law-Medicine Center of Western Reserve University, Cleveland
April 29-30	**American Psychosomatic Society, Inc.** Chalfonte-Haddon Hall, Atlantic City
April 29-30	**Cardiac Resuscitation (California Medical Association in Cooperation With USC School of Medicine).** USC Research Building, Los Angeles
April 29-30	**Office Gynecology (California Medical Association in cooperation With USC School of Medicine).** Los Angeles County Hospital, Los Angeles
April 29-30	**Use and Limitations of Laboratory Tests (California Medical Association in Cooperation With USC School of Medicine).** Los Angeles County Hospital, Los Angeles
April 30	**American Federation for Clinical Research.** Haddon Hall, Atlantic City
April 30-May 2	**Clinical Neurology (California Medical Association in Cooperation With the College of Medical Evangelists).** White Memorial Hospital, Los Angeles
April 30-May 3	**California Medical Association.** Ambassador Hotel, Los Angeles
April 30-May 4	**Pacific Coast Oto-Ophthalmological Society Annual Meeting.** Riviera Hotel, Palm Springs
April 30-May 6	**Bahamas Conference on Internal Medicine.** Nassau, Bahamas
May 1-3	**Association of Surgeons of the Southern Railway System.** University of Virginia, Charlottesville
May 1-3	**Kansas Medical Society.** Broadview Hotel, Wichita
May 1-3	**Ophthalmology for Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
May 1-4	**Nebraska State Medical Association.** Sheraton-Fontanelle Hotel, Omaha
May 1-6	**Lindauer Psychotherapy Week.** Lindau, Germany
May 1-12	**General Pediatrics.** Cook County Graduate School of Medicine, Chicago
May 1-12	**Obstetrics, General & Surgical.** Cook County Graduate School of Medicine, Chicago
May 2	**Anesthesiology.** University of Nebraska College of Medicine, Omaha
May 2-3	**American Pediatric Society.** Hotel Traymore, Atlantic City, New Jersey
May 2-3	**Association of American Physicians.** Chalfonte-Haddon Hall, Atlantic City, New Jersey
May 2-3	**Rhode Island Medical Society.** Rhode Island Medical Society Library, Providence
May 2-4	**Wisconsin State Medical Society.** Hotel Schroeder, Milwaukee
May 2-6	**American Association on Mental Deficiency.** Netherland-Hilton Hotel, Cincinnati
May 3	**Los Angeles County Heart Association Annual Meeting.** Pacific Ballroom, Statler Hilton Hotel, Los Angeles
May 3	**Sixth Annual Trauma Day.** University of Nebraska College of Medicine, Omaha
May 3-6	**American Goiter Association, Inc.** Warwick Hotel, Philadelphia
May 3-7	**Student American Medical Association.** Hotel Congress, Chicago
May 4-5	**California Conference of Local Health Officers Semi-Annual Meeting.** Los Angeles
May 4-5	**Society for Pediatric Research.** Traymore Hotel, Atlantic City, New Jersey
May 4-6	**Symposium on Pediatric Surgery.** New York University Medical Center, New York City
May 4-7	**Hawaii Medical Association Annual Meeting.** Honolulu, Hawaii
May 4-7	**Symposium on Hypertension: Recent Advances.** Hahnemann Medical College, Philadelphia
May 5	**Ohio State Surgical Association.** Nationwide Inn, Columbus
May 5-6	**Society of Neurological Surgeons.** Boston
May 5-7	**American Society of Internal Medicine.** Eden Roc Hotel, Miami Beach, Florida
May 5-8	**American Psychoanalytic Association.** Palmer House, Chicago
May 6	**Problems in Neurology and Neurosurgery.** Presbyterian Medical Center, San Francisco
May 6-9	**North Dakota State Medical Association.** Hotel Gardner, Fargo, North Dakota
May 6-10	**North Carolina State Medical Society.** George Vanderbilt Hotel, Asheville, North Carolina
May 7-9	**Oklahoma State Medical Association.** Mayo Hotel, Tulsa
May 7-11	**North American Federation International College of Surgeons.** Chicago
May 7-12	**Course on Health Services Aspects of Health Mobilization (USPHS and Office of Civil Defense Mobilization).** OCDM Eastern Instructor Training Center, Brooklyn, New York
May 7-12	**Medical Library Association, Inc.** Olympic Hotel, Seattle
May 7-19	**Georgia Medical Association.** Biltmore Hotel, Atlanta
May 8	**Seminar in Pediatric Cardiology.** Children's Memorial Hospital, Omaha
May 8-10	**Gynecology for General Physicians.** Center for Continuation Study, University of Minnesota
May 8-10	**Louisiana State Medical Society.** Hotel Roosevelt, New Orleans
May 8-10	**Symposium on Recent Advances in Dermatology.** New York University Medical Center, New York City
May 8-12	**American College of Physicians.** American Hotel, Miami Beach, Florida
May 8-12	**American Psychiatric Association.** Morrison Hotel, Chicago
May 8-12	**General Surgery.** Cook County Graduate School of Medicine, Chicago
May 8-12	**New York State Medical Society.** Manger Hotel, Rochester
May 9-11	**Mississippi State Medical Association.** Hotel Buena Vista, Biloxi
May 10	**Long Beach Surgical Society Fourth Annual Clinic Day.** The Virginia Country Club, Long Beach, California
May 10-12	**American Association of Genito-Urinary Surgeons.** Del Monte Lodge, Pebble Beach, California
May 11-13	**American Radium Society.** Broadmoor Hotel, Colorado Springs
May 11-13	**Ear-Nose-Throat.** University of California, San Francisco
May 11-13	**Surgery for Surgeons.** Center for Continuation Study, University of Minnesota, Minneapolis
May 12-13	**Washington Academy of General Practice.** Davenport Hotel, Spokane
May 13	**Kentucky Surgical Society.** French Lick Sheraton Hotel, French Lick, Indiana
May 13-17	**New Jersey State Medical Society.** Haddon Hall, Atlantic City
May 15-18	**Illinois State Medical Society.** Chicago
May 15-18	**Surgery.** University of Kansas Medical Center, Kansas City, Kansas
May 15-19	**Blood Vessel Surgery.** Cook County Graduate School of Medicine, Chicago
May 15-19	**Proctology for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis

(Continued on page 250)

Editorials

TETANUS CONTINUES TO BE A PROBLEM

A case of tetanus seen recently was a dramatic reminder that the tetanus organism is still ubiquitous, that the disease can occur as a result of a seemingly inconsequential injury, and that if it is to be prevented there can be no departure from accepted surgical principles or from standardized methods for the specific prophylaxis of the disease.

The patient, an 11-year-old boy, had sustained what was considered a rather insignificant abrasion and contusion in the region of the knees from a fall on the pavement. No immediate treatment had been given. Infection subsequently developed, and not until that time was professional advice sought. A booster injection of tetanus toxoid was given him on the fifth day after his injury. Symptoms of tetanus developed on the seventh day.

According to the boy's parents, he had been given tetanus immunization as an infant, but they had no definite record or memory of his having received a reinforcement injection at a year or year and one half of age, though they had a vague memory of a booster at about five years. They were certain that no injection had been given him in the last six years.

The effectiveness of tetanus toxoid prophylaxis was thoroughly demonstrated in World War II. In over 2,500,000 injuries, there were just 12 cases of tetanus. Of these 12 patients, only six had received toxoid injections, and only four had received the basic immunization and an emergency booster at the time of injury. Debridement and removal of devitalized tissue was standard treatment of all wounds.

In civilian practice, universal immunization would be ideal, but remains a Utopian dream. Thus, the physician's efforts should be directed toward the protection of all children, all allergic individuals for whom the administration of horse serum would be hazardous, and those individuals whose occupations expose them to tetanus-prone injuries—farmers, construction workers, athletes, firemen, policemen, etc.

If it is to be effective, active immunization against tetanus cannot be conducted in a haphazard manner. Adequate immunization is accomplished in three stages. *The first stage* consists of primary immunization, which is the injection of toxoid at intervals of four to six weeks. In children, precipitated tetanus toxoid is ordinarily combined with diphtheria toxoid, pertussis vaccine and, recently, poliomyelitis vaccine, given in three injections at four- to six-week intervals. In older children and adults not previously immunized, fluid toxoid is given in two injections, from four to six weeks apart. *The second stage* is a reinforcing dose of toxoid, which should be given 10 to 12 months after the first-stage inoculations. This is a most important, though frequently omitted, injection, for it is necessary if a sufficient titer of antibody is to be maintained. *The third stage* is the administration of a booster injection of toxoid every four to five years. Though measurable amounts of antibody may be present for as long as 10 or 15 years, the titer gradually falls, and there may be a loss of capability to respond to a booster injection. The Armed Forces have adopted an interval of four years, which has proved very satisfactory over a period of years.

When an injury occurs, a booster injection of toxoid should be given within the first 24 hours. This will result in a rapid elevation of the antibody titer by the fourth or fifth day. If there has been any delay in the treatment of the wound or in the injection of a booster dose of toxoid, or if there is any question about the accuracy of the immunization record or too long an interval since the last booster, prophylactic antitoxin should be administered. The dose of antitoxin should depend upon the nature of the wound and the amount of time that has elapsed since the injury. The dosage of antitoxin is a matter of clinical judgment, varying from 1,500 to 10,000 units.

The responsibility for tetanus prophylaxis is in the hands of physicians. Careful immunization records should be kept. Patients should be notified by postcard or letter before there is a lapse in effective antibody titer. Each patient should be provided with an immunization record, its importance should be emphasized, and the necessity and importance of booster injections should be made clear.

The prevention of tetanus has been one of the outstanding contributions of medicine to the welfare of mankind. It is only through careful attention to the details of accepted prophylactic technics that the record can be maintained.

ANNUAL UNIVERSITY ISSUE

The editors of the JOURNAL wish to thank Dr. David Culp and the members of his committee at the S.U.I. College of Medicine for planning and assembling the scientific articles section for this issue.

CANCER CELLS IN THE PERIPHERAL BLOOD

Disturbing reports have come from various centers, in the past few years, of the finding of malignant cells in the peripheral blood streams of a surprisingly high proportion of patients with malignant disease.

As a consequence of the discovery, by various investigators, of some effective methods for the separation of the red and white cells, there have been serious efforts to demonstrate neoplastic cells in the peripheral blood, in the bone marrow and in the venous blood draining a malignant area. The highest incidence of neoplastic cells was found by Engell,[1] in the blood drawn from a vein which drained a malignant area. He found cancer cells in 59 per cent of 107 cases of cancer of the rectum and colon, in blood drawn from the vein leading from the tumor area. Sandberg *et al.*[2] reported clumps of neoplastic cells in the bone marrow in 7.7 per cent of 600 cancer patients, and in the peripheral blood in 8.8 per cent of 300 such patients. Warren Cole and his group,[3] in a study of 100 cancer patients, found cancer cells in the circulating blood in 16.7 per cent of the curable and in 31.1 per cent of the incurable patients. In six of seven cases studied before and after surgery, there appeared to have been an increase in tumor cells in the circulating blood during the manipulation incident to surgical resection. Sandberg and Moore[4] reported finding tumor cells in the peripheral blood in 38 per cent of 132 patients with advanced carcinoma, and in blood from the regional vein in 40 per cent of 55 patients with cancer. No tumor cells were found in the blood of normal subjects, or of patients with non-malignant disease. Pruitt *et al.*,[5] in examining the peripheral blood of 100 cancer patients, found malignant cells in 39 instances and cells considered suspicious in 12. In contrast, they found cytologically malignant cells in only one of 200 persons in the control group.

Two recent articles have cast considerable doubt upon the validity of these discouraging figures. Alexander and Spriggs[6] examined 250 blood samples from 140 persons with malignant disease and from 60 controls. Acceptable tumor cells were identified in the blood of only seven patients, none of whom survived more than a few months. They pointed out that the statistics probably resulted from the investigators' confusing little-known cells with tumor cells. Further research needs to be made into the non-malignant cells occurring in the circulation before statistical data on the frequency of the circulating tumor cells can be considered accurate. Raker, Taft and Edmonds[7] found tumor cells in the peripheral blood in only two of 144 patients in whom malignant tumors were present. Megakaryocytes were found in 60 patients and were mistaken for tumor cells at the beginning of the study. The megakaryocyte is a large cell with lobulated cytoplasm which closely resembles the tumor cell.

It has long been recognized that some malignant tumors metastasize through the blood stream. The significance of the isolated cancer cell in the peripheral blood is not known, but it is thought that it is merely an exfoliative cell, and is not considered viable. Clumps of neoplastic cells, on the other hand, are thought to be metastatic emboli.

It appears obvious that standardized methods for separating white cells from red cells must be developed. It is apparent that there is considerable confusion among qualified cytologists concerning the accurate recognition of malignant cells in the blood. This is a challenging field of research, and it is hoped that reliable and significant findings in it will aid in the diagnosis and management of patients with malignant disease.

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ANIMALS OR PEOPLE? THE LEGISLATORS MUST CHOOSE

The anti-vivisectionists are again pursuing a strenuous campaign to deprive the biologist and the physician of laboratory animals for research. These zealots are a minority group of laymen, imbued with fanatic ardor. They are dedicated to the cause of the dumb animal, whereas the biologist and the physician are dedicated to the welfare of mankind.

If it had been deprived of animals for research, medicine today would still be medieval medicine. The tremendous advances it has made can be attributed to the efforts of countless scientists, many of whom lost their lives conducting research upon themselves, as well as upon laboratory animals, in the pursuit of knowledge for the welfare of mankind.

The anti-vivisectionists make allegations which cannot be substantiated. Their campaign is predicated on the premise that animal experimentation is immoral, cruel and without value. If the pursuit of knowledge for the welfare of humanity is immoral, the guilt must be acknowledged, but

the thousands who have worked in biologic laboratories emphatically deny abuse or cruelty to the animals, whether they be dogs, rabbits, guinea pigs or monkeys. The diener in an animal laboratory is as dedicated in the care he gives the animals as is the anti-vivisectionist to her cause. The anti-vivisectionists deny the scientist his experimental animals, yet they destroy thousands of animals in the vacuum chamber. Their charge that animal research is valueless is so utterly ridiculous that it merely indicates their ignorance or unmitigated prejudice.

If this fantastic group would divert their energies to the alleviation of man's inhumanity to man—to the prevention of war, to the correction of social injustices—or to fund-raising for the fight against cancer, vascular disease and comparable scourges, they might accomplish something really worth while.

Under the terms of a bill, Senate File 210, in the current session of the General Assembly, unclaimed and unwanted dogs would be made available for scientific research and medical teaching in the State of Iowa. Adequate safeguards and controls are provided. The State Department of Health is assigned responsibility for carrying out its provisions, and that is the agency which should have that duty. Physicians are urged to ask their representatives to support this corrective and constructive piece of legislation.

ATHEROSCLEROSIS AND CHOLESTEROL

For about 50 years, the medical profession has been acting on a syllogism about fat and atherosclerosis. The major premise has been that atherosclerosis is caused by cholesterol. The minor premise has been that the amount of atherosclerosis is dependent on the height of the serum cholesterol. On the basis of this largely *a priori* reasoning, we have concluded that we could eliminate atherosclerosis by lowering blood cholesterol, and that the best way of lowering it is to alter the diet. Of course both our premises may be in error, and if they are, our conclusions stand an even better chance of being erroneous.

Efforts made to alter the blood fats of human beings by dietary manipulation have been notoriously ineffective, notwithstanding statements to the contrary by various investigators, each with his own set of pet ideas. Thus, it seems that we should be about ready to look in other directions for the answer to the problem of atherosclerosis.

Basic research is needed on the biophysiology of the arteries—studies of the effects of various mechanical stresses, and of the chemical metabolism of the arterial wall. Some of this research is already under way.

Until we get some definite answers from those interested in basic research on the arterial wall, we must content ourselves with the search for substances which will *prevent the body from forming* blood fats (since serum cholesterol may actually rise during fasting). Triparanol (MER 29) is one such drug now being assayed. It is a step in the right direction, but not the final answer. Its action is to inhibit cholesterol formation in the liver at its last synthetic step, namely the transformation of desmosterol to cholesterol. Ruskin* has found that it does indeed lower blood cholesterol without damaging the liver, as nicotinic acid may. (Nicotinic acid apparently acts by inhibiting the earlier stages of cholesterol synthesis, perhaps by depleting coenzyme A. It may be accompanied by "sulfobromophthalein retention"). MER 29 appears to lower serum cholesterol about 15 per cent on the average, and to keep it down. Also, it is free of toxic effects on either a normal or an abnormal liver.

It seems likely that in the years to come we shall laugh at the silly diets that we insisted that our patients observe between 1930 and the 1960's. In the future, we shall be attacking the problem of atherosclerosis in much the same way that we attack other metabolic problems—by chemical means. MER 29 is, therefore, a welcome step in the right direction.

THE TALE OF A SHIRT

The hospital shirt is a garment
Of wonderful use,
It clings to your bosom
But behind it is loose.

You can talk face to face
With a nurse without fear,
But your heart fails to function
If she steps to your rear.

Then you're blushing in front
And embarrassed behind.
But the nurse never falters,
Just pretends she is blind.

She smooths down your pillow,
From your brow wipes the dirt,
And hopes you'll forget there's
No tail to your shirt.

This was written at almost 90 years of age by a man who had just experienced his first hospitalization. May it provoke a chuckle.

* Ruskin, A.: Hypocholesterolemic effect of triparanol (MER 29) in man. ARCH. INT. MED., **106**:803-808, (Dec.) 1960.

Letter to the Editor

EXCHANGE TRANSFUSIONS

Sir:

In the article appearing in the March issue of the the JOURNAL, "Exchange Transfusion—A Surgical Procedure," Drs. Gildea and Cunnick review some important aspects related to the exchange transfusion of infants.

I agree that the exchange transfusion should be done by those familiar with it and competent in doing it. Likewise, the importance of doing the exchange in the operating room and with good equipment and experienced personnel cannot be overemphasized. These are self-evident truths. One might say it is just as self-evident that every doctor is not competent nor experienced to do cardiac surgery, much less to do it on a kitchen table.

I believe most physicians familiar with this problem find the umbilical vein a very satisfactory, adequate and safe approach. Of course, good equipment, good work area and experienced personnel are necessary. Dr. Cunnick should not do a cut-down on the saphenous vein under inadequate conditions, nor should anyone do any type of exchange in the "corner of a nursery." I would suggest that there would be as many uncompleted exchanges, exhausted doctors, nurses and babies if a saphenous vein were used for the exchange in the same nursery corner. It does not appear necessary for a surgeon to be consulted and a saphenous vein exposed for the purpose of doing the vast majority of exchanges, when done under proper conditions by experienced individuals. The experience of those in private practice as well as those doing exchanges in large centers has proved that the umbilical-vein approach is the one of choice. This approach does not necessitate surgical dissection and exposure of an important vessel. It does not have the attendant risk of phlebitis. It does not present the problem of edematous legs persisting for the next three months. It does not require a second cut-down after 52 hours if further exchanges are necessary, as they so frequently are.

An exchange transfusion via the umbilical vein can usually be accomplished as late as the fourth or fifth day. We have done as many as six exchanges on an infant by this route without ill effect.

I do not argue the point of having a competent and experienced surgeon doing the exchange, although I personally believe that the procedure still is in the field of pediatrics and pediatricians. I do dispute the advisability of the procedure that Dr. Cunnick uses. I believe that the pediatrician and the general practitioner have as important a responsibility in advising against unnecessary surgery as in advising a surgical procedure when it is necessary. I believe that it is for them to recommend the well-established and long-proved, excellent method of exchanging infants—exchange via the umbilical vein.

R. C. MITCHELL, M.D.

330 South Street
Waterloo, Iowa
March 13, 1961

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

REGARDING HYPNOSIS

A STATEMENT OF POSITION BY THE AMERICAN PSYCHIATRIC ASSOCIATION

Many inquiries requesting an official opinion of the American Psychiatric Association on hypnotic therapy have been received from local psychiatric and other medical societies and from individual members of the Association and others. These inquiries, in general, ask the following questions: Is hypnosis an acceptable psychiatric procedure? If so, who should teach it? To whom should it be taught? What should be the depth and extent of such teaching? Where can adequate training be secured?

The following statement of position regarding these matters has been prepared by the Committee on Therapy of the American Psychiatric Association, and is published with the approval of the Council of the Association for the information and guidance of all concerned.

Hypnosis is a specialized psychiatric procedure, and as such is an aspect of the doctor-patient relationship. Hypnosis provides an adjunct to research, to diagnosis and to treatment in psychiatric practice. It is also of some value in other areas of medical practice and research.

Unfortunately, so little is known of the nature of the hypnotic state that definitions usually reduce themselves to mere descriptions of the various manifested phenomena. Few reports of controlled experiments into the nature of hypnosis have been published.

Hypnosis is appropriately and properly used in the course of therapy only when its employment

serves therapeutic goals without posing undue risk to the patient. With selected patients, it can be used for sedative, analgesic and anesthetic purposes; for the relief of apprehension and anxiety; and for symptom suppression. It can also be used, but on a still more highly selective basis, as an adjunct in the treatment of patients with neurotic or psychotic illness.

Hypnosis or hypnotic treatment, like any other psychiatric procedure, calls for all examinations necessary to a proper diagnosis and to the formulation of the immediate therapeutic needs of the patient. The technic of induction of the trance state is by far the least important of the many facets of the hypnotic procedure, and under no circumstances should it be taught independently.

Whoever makes use of hypnotic technics, therefore, should have sufficient knowledge of psychiatry, and particularly of psychodynamics, to avoid its use in clinical situations where it is contraindicated or even dangerous. Although similar dangers attend the improper or inept use of all other aspects of the doctor-patient relationship, the nature of hypnosis renders its inappropriate use particularly hazardous. For hypnosis to be used safely, even for the relief of pain or for sedation, more than a superficial knowledge of the dynamics of human motivation is essential.

Since hypnosis has definite application in the various fields of medicine, physicians have recently shown increasing interest in hypnosis and have turned to psychiatrists for training in hypnosis.

To be adequate for medical purposes, all courses in hypnosis should be given in conjunction with recognized medical teaching institutions or teaching hospitals, under the auspices of the department of psychiatry and in collaboration with those other departments which are similarly interested. Although lectures, demonstrations, seminars, conferences and discussions are helpful, the basic learning experience must derive from closely supervised clinical contact with patients. Since such psychiatrically-centered courses are virtually nonexistent, many physicians have enrolled in the inadequate brief courses available, which are often taught by individuals without medical or psychiatric training. These courses have concentrated on hypnotic-trance technics and have neglected psychodynamics and psychopathology or have covered them in a superficial or stereotyped fashion.

Proper safeguards for the use of hypnosis are vitally important to the patient, to all physicians, and to psychiatry as a specialty.

RECOMMENDATIONS

In the interests of encouraging the safe use of hypnosis, the following recommendations are approved.

1. Isolated courses limited to the teaching of trance-induction technics are strongly disapproved.

2. The teaching of hypnosis should take place in medical schools and other psychiatric training centers that have an interest in the teaching of hypnosis. When taught in such a climate, where students can acquire an adequate knowledge of psychiatric principles, hypnosis may become a useful adjunct to therapy.

3. The teaching of hypnosis should be of sufficient duration and depth for students to acquire adequate understanding of its appropriate place in relation to other psychiatric treatment modalities; of its indications and contraindications; of its values and its dangers. Decisions regarding the depth and extent of the teaching of hypnosis should remain flexible, and should be made by the psychiatric departments teaching such courses.

4. Training in all aspects of hypnosis should be made available to physicians and dentists requesting it.

5. An expansion of facilities for the teaching of hypnosis is needed, particularly at the postgraduate level. The establishment of postgraduate courses in medical schools and other teaching centers under the direction of the department of psychiatry is recommended.

6. Physicians practicing hypnosis should do so only in their particular fields of medical competence.

7. The need for continued study of hypnosis and for adequate research is emphasized, with particular reference to delineating its place in the total treatment program.

GOLF TOURNAMENT

The annual physicians' golf tournament, held at the time of the ISMS Annual Meeting, will take place at the Wakonda Club, in Des Moines, on Sunday, April 23.

Players may begin at any time during the day, but the majority will start at 1:00 p.m. Dinner and the awarding of prizes will follow.

For reservations, address Harold J. McCoy, M.D., 212 Bankers Trust Building, Des Moines 9.

IOWA RHEUMATISM SOCIETY

A meeting for the purpose of organizing the Iowa Rheumatism Society as an affiliate of the American Rheumatism Association will be held at 7:30 a.m. on Tuesday, April 25 (during the Annual Meeting of the Iowa State Medical Society) in the Capital Room at the Hotel Fort Des Moines. Breakfast will be served.

Tickets are $1 each, and reservations should be made in advance by writing or telephoning the Iowa Chapter of the Arthritis and Rheumatism Foundation, 4316½ SW Ninth Street, Des Moines.

Final Report to the House of Delegates

of the

ISMS Policy-Evaluation Committee

This is the second and final report of the ISMS Policy-Evaluation Committee to the House of Delegates.

The Policy-Evaluation Committee was created on authority of the Board of Trustees, May 13, 1959, in conformance with an action of the House of Delegates in session April 22, 1959. A progress report of the work of this Committee was published in the April, 1960, issue of the JOURNAL OF THE STATE MEDICAL SOCIETY, and was presented to the House of Delegates at its 1960 session. It was accepted with the understanding that the Committee would continue its intensive study of Blue Shield Plans, and would present its final report in April, 1961.

As background, it should be said that the House of Delegates of the ISMS, in April, 1959, recommended that the new Blue Shield "Senior 65" and "Middle Income (B-400)" contracts be considered as pilot programs for a period of two years, and it asked that at the end of one year a progress report be presented to the House of Delegates as to the functioning of these Blue Shield programs. In addition, it recommended that a reevaluation report be submitted at the end of two years. This reevaluation report, which includes recommendations as to the future of Iowa Medical Service, is as follows.

When Iowa Medical Service was organized, in 1945, by the Iowa State Medical Society, the profession entered the prepayment medical care field to promote health care protection, especially for persons of low or modest incomes. Since that date, the voluntary health insurance concept has been widely accepted, and great strides have been made, both in the non-profit and in the private insurance industry. Excellent coverage is now available to individuals of all ages from both types of companies, and this coverage is continuing to expand at a rapid pace. Iowa Medical Service was organized as a full-service program for the low income groups, and income levels and fee schedules have been raised on three occasions—in 1950, 1953 and 1959. However, for subscribers with incomes above a stated level, it has functioned as an indemnity coverage. The determination of, and the agreement on, income levels has been a controversial issue with the participating physicians and members of the Iowa State Medical Society. Fee schedules and minor details have not always been entirely satisfactory to the members.

The cost of medical care is still of concern to the modest-income groups, as well as to those of higher incomes. More and more of the population is looking to prepayment as a means of providing payment for medical care. The threat of federal medicine is still ever-present, and the private practice of medicine and voluntary health insurance are endangered. Before it is too late, it is necessary that the medical profession in Iowa unite solidly in support of an effective, non-profit, voluntary prepayment program.

PREPAYMENT

Prepayment of Medical Care. It is the opinion of the Policy-Evaluation Committee that participating physicians and the Iowa State Medical Society believe in the prepayment concept. Also, the Committee feels that with the present social, political and economic developments, prepayment is not only inevitable but is an established fact, and is desirable as one method of meeting the cost of medical care. Thus it follows that a "third party," under some circumstances, must be and is acceptable.

The acceptable "third parties" include:

Government (Third Party)—federal, state, county, city, for the indigent and near-indigent, through city, county welfare plans, vendor plan, Kerr-Mills program. The third party is acceptable if determination of need is made at the local level and if it results in no interference with the physician's judgment as to the type and quality of care, and if the patient has a free choice of physician.

Private Prepayment Plans (Third Party)—Voluntary prepayment policies may be purchased by individuals, employer-employee, or government. Two types of companies can serve this purpose: (1) commercial companies, and (2) Blue Shield—non-profit.

The AMA Concept, formulated in June, 1960, as to voluntary health insurance and Blue Shield is as follows:

(1) "Advocates doctor participation to continue leadership in experimentation in the expansion and improvement of benefits."

(2) "Medical Society representation to help formulate policy, to prevent interference with the right of physicians to exercise professional judgment in rendering medical care, and to assure that benefits and benefit allowances are fair to the patient and doctor."

The above AMA Concept makes no mention as to type of coverage, full service or indemnity.

Since its formation, six formal meetings of the Policy-Evaluation Committee have been held, all of which were day-long sessions. On February 9, 1961, it met for six hours to review alternative plans in reference to the future of Blue Shield and its relationship to the Iowa State Medical Society. (After the Committee had completed its morning deliberations, Earl C. Lowry, M.D., president of Iowa Medical Service, was invited to appear before the Committee to report on the current status of the Blue Shield programs under study. His remarks appear at the conclusion of this report.)

Three plans were considered:

(1) Accept the present Blue Shield programs, and continue to improve its offerings as well as to strengthen ISMS-Blue Shield relations.

(2) Separate Iowa Medical Service from the ISMS.

(3) Convert Blue Shield from a full service-indemnity company to strictly an indemnity company.

Following careful consideration of these proposals, the Committee unanimously approved as its first choice, and as the one to be presented to the House of Delegates, the plan to "accept the present Blue Shield programs, and continue to improve its offerings as well as to strengthen ISMS-Blue Shield relations." This proposal contains the following information:

The B-400, $5,400 service income level contract, utilizing the ISMS Unit Fee Index (Gray Book) with a $4.00 unit, is being very well accepted by the medical profession and the public. It is agreed that this has occurred because of the Plan's realistic fee schedule for this category of people, and because it fulfills the expectations of its purchasers.

Practically all complaints involving the Senior 65 Plan have ceased since the increase in the dollar value of the unit for this program from $2 to $3, which became effective April 15, 1960.

Relations between the ISMS and Blue Shield seem to be excellent. At present, there is complete and free exchange of information between the ISMS and Blue Shield on all problems of mutual interest. This degree of cooperation is deemed essential if Blue Shield is to maintain proper relations with the medical profession, to serve the purpose for which it was originally intended, and to progress, as certainly it must.

The Iowa State Medical Society has used its resources, financial and otherwise, to organize and promote Blue Shield with physicians and the public. Much more could be accomplished in promoting Blue Shield with the public if individual doctors would take a more active interest. The Society could assist Blue Shield in

(1) expanding its physician information programs,

(2) improving its relations with the public, and

(3) increasing sales.

In return, the ISMS should have the right to expect the best possible sales presentation of Blue Shield, which, in fact, is the marketing of physicians' services. Underselling or overselling Blue Shield causes equal damage to the public relations of the medical profession and Blue Shield. Blue Shield has made great strides in this respect, but further improvement is needed because of the ever-increasing numbers of people enrolled, the multiplicity of contracts, and the other complexities that make it ever more important that Blue Shield establish proper rapport with the public. Committees of physicians in private practice should confer periodically with presidents of Blue Cross-Blue Shield and their public relations and sales executives to consider sales and public relations problems.

Better coordination and a closer working relationship between ISMS and Blue Shield field men, all of whom are trained in professional relations, would result in improved understanding and cooperation between the organizations they represent, the profession and the public.

The Medical Society and Blue Shield need assistance in meeting the force of an increasing number of unfriendly organized groups (such as organized labor) to influence the shaping of public opinion. It is believed that, if physicians were convinced of Blue Shield's dedication to them, it could expect support from practically the entire membership of the ISMS, which approximates 2,500 physicians. If this were attained, there is no conceivable Blue Shield promotional effort (public or otherwise) that could compare with it. On the other hand, the Blue Cross-Blue Shield sales force and its many other employees are in an excellent position to influence the attitude of the public toward physicians. Since, in fact, Blue Cross-Blue Shield personnel are doctors' representatives and participate in one way or another in the sale of physicians' services, the profession believes it deserves stronger support from these employees in promoting its relations with the public.

Also as a part of Plan 1, the Committee approved the following recommendations:

(1) Continue to adjust Blue Shield contracts to satisfy inequities.

(2) Increase application of deductible and coinsurance features as methods of broadening coverage and lowering prepayment rates. (Note: Between 60 and 70 per cent of present Blue Shield payments are on an indemnity basis—i.e., not full-service.)

(3) Expand coverage for outpatient diagnostic services (this has already been initiated on a trial basis).

(4) Establish major-illness or catastrophic plans.

(5) Design contracts with service income levels to permit Blue Shield participation in the federal-

employee plan—i.e., high level $6,000; low level $4,000.

(6) Permit Blue Shield to develop special contracts which will enable it to participate in national accounts such as Northwestern Bell Telephone, Ford Motor Co., etc., with the understanding that if these special contracts for national accounts constitute departures from basic policies already approved by the Medical Society, particularly in reference to full-service income levels, they will be referred to the Executive Council or to the House of Delegates for approval.

(7) Consider development of a higher income level service contract which would provide appropriate and equitable fees when applied to the Iowa Unit Fee Index (Gray Book), to supplant the present Blue Chip contract. The Committee understands that experience with the Blue Shield Blue Chip program has shown such a plan to be extremely difficult to administer. That is the basis for this one of the Committee's recommendations.

The second proposal—the one that recommended the separation of Iowa Medical Service from the ISMS—was studied at length, and was rejected for the following reasons:

(1) Nothing would be gained by such a separation, as far as the ISMS is concerned, but much might be lost. Obviously, Blue Shield could operate independently of the Medical Society. Policies of the Blue Shield Board would then be established with individual physicians, without the benefit of utilizing the established structures of the State Medical Society as the mechanism for determining policy for medicine in Iowa.

(2) Blue Shield programs, developed independently of the Medical Society, might not be acceptable to the membership as a whole. Thus, the the close liaison established between Iowa Medical Service and the ISMS in recent years would cease to exist.

After careful study, the members of the Committee unanimously agreed that the proposal for separation was not an acceptable solution.

The third proposal was to "convert Blue Shield from a full service-indemnity company to strictly an indemnity company." Of the 13 Blue Shield plans that operate on an indemnity basis, the majority are now studying various ways to establish full service benefits in their programs. Although indemnity plans have many advantages, such as avoiding the objections to full-service, a change in 1961 would present many serious socio-economic problems. Public criticism of the medical profession for withdrawing its support from the full-service concept would be intensified by those who wish to embarrass the profession. In all probability, a move to convert Blue Shield from a service plan to an indemnity plan would be a "bombshell." Blue Shield would become just another mutual or stock company, without tax advantage, and no doubt a large segment of present Blue Shield subscribers would be lost, since Blue Shield would be divested of its basic sales advantage. It seems likely that the Iowa legislators would look with disfavor if, at this late date, the full-service plan as a basic concept for the modest-income groups were eliminated.

The establishment of an indemnity plan back in 1945, when Blue Shield was organized, might have been feasible, but after Blue Shield's many years of existence and the commitments it has made as a service corporation, any attempt to convert it from a service-indemnity to an indemnity company at this critical time would be extremely unwise.

Thus, the Policy-Evaluation Committee, after careful study, unanimously rejected this third proposal.

In conclusion, the ISMS Policy-Evaluation Committee recommends to the 1961 House of Delegates of the Iowa State Medical Society the approval of its "first choice" plan: No. 1—"Accept the present Blue Shield programs and continue to improve its offerings as well as strengthen ISMS-Blue Shield relations."

It is the opinion of the Committee that although there is no entirely satisfactory answer to all of the objections and problems, in view of the present critical political and socio-economic situation, the recommended course of action is the only practical answer.

Respectfully submitted,
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W. K. HICKS, M.D.
G. M. WYATT M.D.
W. L. DOWNING, M.D., *Chairman*

DR. LOWRY'S STATEMENT

The following statement was presented to the Policy Evaluation Committee, on February 9, 1961, by E. C. Lowry, M.D., president of Iowa Medical Service (Blue Shield).

"With the implementation of the 'B-400' contract and the 'Senior 65' contract, the House of Delegates of the Iowa State Medical Society indicated that a two-year pilot study be made, with a report at the end of that time as to the progress. Blue Shield initially made a careful and analytical analysis of all complaints, recommendations and suggestions received incident to these contracts, as well as Blue Shield operations in general. This was a continuing activity, and in order to alleviate and improve Blue Shield operations, the following specific actions have been carried out.

"1. The 'Senior 65' fee schedule for surgical and

medical procedures was changed from a $2 unit to a $3 unit in the Iowa Relative Value Schedule. XL [x-ray and laboratory service] payments at the same time, April, 1960, were paid in full.

"2. Diagnostic coverage has been explored, a contract developed and some 7,000 sold. This was at first a pilot study, but this contract is now available for sale in accordance with proper surveillance rules.

"3. The old 'A-250' contract which did not provide for the payment of multiple physicians on the same case was taken off the market on January 1, 1960, and subscribers holding this contract have been and are being moved to the 'B' coverage. This job is over two-thirds accomplished, and only about 80,000 contracts remain to be moved. This will alleviate many complaints, in that we can pay for concurrent medical care, consultations, etc., in keeping with modern medical practice.

"4. The fiscal circumstances of Blue Shield have been effectively improved. It is possible now for the Claims Committee to have funds to assist in really deserving problem cases where application of the fee schedule arbitrarily would, in fact, be an injustice to the physician.

"5. Blue Shield has a dental consultant who reviews all dental claims, thereby eliminating payment for dental services and paying only for surgical procedures which may have been performed by a dentist, yet are a covered service by the patient's contract. In my view, this has completely solved our difficulties with the Iowa Dental Association.

"The following subjects are currently under study and investigation with the view to coming to a solution which will be of great assistance to the subscribers and physicians in Blue Shield operations.

"1. A survey is being made to move all fee schedules to a single book, namely the Iowa Unit Fee Index 1958. Contracts would then vary only by dollar value on the units as shown.

"2. Major medical coverage. There is an increasing demand for and interest in this coverage by industry, the people and physicians. Committees have had several meetings on this subject, and the program is being diligently pursued.

"3. A program has been developed to provide for committees from specialty groups to meet with Blue Shield to iron out special problems in the specialty concerned. For example, many procedures are not currently in the fee schedule. The physicians' understanding of relative values, rates of payment, definitions and Blue Shield coverages is thereby enhanced. A meeting has already been held with the state urological association. Plans are under way in anesthesia, internal medicine and pediatrics.

"4. A special contract is being developed for the coverage of college students as a group. This is in response to a request from colleges in the state.

"5. Many special matters are under study, such as a request for coverage by podiatrists, duplicate coverage of health benefits, abuses, including unnecessary hospital admissions.

"In summary, it would appear that while much remains to be done, the above steps eliminate more than 60 per cent of the objections received during the two-year period of the pilot study. It is my view that with planning and careful coordination between Blue Shield and the Iowa State Medical Society, and with a sincere regard for the subscriber and his fiscal status, all major problems incident to Blue Sheld operations can at least be brought to an amenable and workable solution."

AMA MEDICOLEGAL CONFERENCES

The AMA will conduct two medicolegal conferences in April, one of them at the Hotel Kentucky, in Louisville, on April 14-15, and the other at the Statler-Hilton Hotel, in New York City, on April 28-29. In writing to those hotels for accommodations, physicians are asked to mention that they will be attending the AMA Regional Medicolegal Conference.

Following is a summary of the program for the New York City meeting, but the programs of the two are nearly identical. Sponsored by the AMA's Legal and Socio-Economic Division, the meeting will have panel discussions on *res ipsa loquitur* in medical professional liability cases, use and misuse of demonstrative evidence in personal injury cases, expert medical testimony, and the status of physician-attorney relations.

A half-day session will be devoted to developments and trends in judicial procedures. Included will be a consideration of the separation of questions of liability and damages in the trial of a case, impartial medical testimony projects, developments in pre-trial hearings and discovery procedures, and the "liability without fault" approach in all personal injury litigation.

Another half-day session will deal with a discussion of the most important cases in the medicolegal field during the past 18 months. The cases will be discussed not only by legal experts but also by physicians, as to the medical implications of the decisions rendered.

The registration fee for either conference will be $5, to cover the cost of a luncheon and a copy of the proceedings. Advance registration cards can be secured from C. Joseph Stetler, director, Legal and Socio-Economic Division, American Medical Association, 535 North Dearborn Street, Chicago 10.

The Way One State Did It

NOBLE W. IRVING, M.D.

This report was presented by Dr. Irving, chairman of the ISMS Committee on Legislation, at the AMA Medical Legislation Conference, in Chicago in mid-March.

Speaking for the Iowa State Medical Society, I am flattered and pleased to be given an opportunity to discuss the manner in which the anti-Forand campaign was conducted in the State of Iowa. Frankly, it was nothing unique, and followed almost precisely the proposals that originated at the AMA Legislative Conference that was held in St. Louis in the fall of 1959, and which were further emphasized by additional instructions from the office of the AMA as the campaign progressed.

Subsequent to the St. Louis Conference, which several of our Society's officers, committee members and staff attended, we were determined to organize a legislative rally back home, designed to stimulate grass-roots activity. As had been emphasized repeatedly, the success or failure of the anti-Forand campaign would be determined at the grass-roots—not in Washington, Chicago, or at the headquarters office of a state medical society.

As our delegation returned from the St. Louis meeting, it spent practically its entire traveling time attempting to design a suitable outline for a special statewide legislative conference to inform and encourage the participation of ISMS members in a positive plan of action at the community level.

A first step was a complete briefing of the entire ISMS staff on the St. Louis meeting, and the announcement that a state legislative conference would perhaps be developed along similar lines. A telephone conference of the Society's Board of Trustees was held, and the Committee on Legislation was given authority and responsibility for arranging a Special Conference on Legislation.

Within 10 days, detailed planning for the Conference had been completed, and on November 8, 1959, the meeting was held in Des Moines. In attendance were representatives from practically all of the 99 counties in Iowa. These included county society presidents, secretaries, legislative contact men, and deputy councilors, and at the state level, all of the officers of the State Society and its Woman's Auxiliary, and other key individuals.

The program included topics such as "The Physician's Responsibility as a Citizen," "AMA Legislative Activities," "The National Scene," "The Real Problems of Aging," and others. Included in the program were three nationally prominent speakers—our good friend Dr. Ernest Howard, of the AMA; Dr. Durward G. Hall, now a congressman, who at that time was president of the Missouri State Chamber of Commerce; and Congressman Thomas B. Curtis, of Missouri, a member of the House Ways and Means Committee.

The program was designed so that all branches of the ISMS participated.

At the close of the day-long session, Dr. Orr's audio-visual talk "Time for Decision" was presented, and the AMA kits "A Positive Program for Community Action for Our Senior Citizens" were distributed to all in attendance.

Following the meeting, the AMA kits and Dr. Orr's talk were sent to key individuals in every county. This was done to insure the availability of this information throughout the state. In addition, all members of the Society received a summary report of the ISMS Legislative Conference.

Without proper administration, a campaign of this type would have been lacking in depth and continuity. Acknowledging this fact, the Board of Trustees of the Society instructed its executive director to give top priority to the implementation of a program to combat the Forand Bill. To guarantee immediate action, the Society's two field secretaries were assigned to this project full time. One was responsible for coordinating the overall campaign, as well as for making contacts with other organizations at the state level. The other was given the task of organizing and activating programs in each of the 99 counties. The latter, during the heat of the campaign, served half-time as field representative for the AMA, being responsible for the states of Iowa and Minnesota.

We could not have accomplished our objectives had it not been for the fact that the entire ISMS staff gave top priority to its responsibilities in connection with the anti-Forand campaign, in addition to their regular duties.

In retrospect, it is clear that one of the best things the Society did was to stimulate the organization of a Joint Council on Health Care for the Aged, patterned after the national council. As we understand it, Iowa's Joint Council was one of the first—if not the very first—having been organized in the summer of 1959. This Joint Council served as a nucleus for much of our state and county activity, particularly with people in the health fields.

The insurance industry was a very important ally. Insurance groups that cooperated with us included the Iowa State Association of Life Under-

writers, the Iowa Association of Mutual Insurance Agents, the Central Iowa Association of Health and Accident Insurance Agents, and the Iowa Association of Independent Insurance Agents.

As an indication of the cooperation that the insurance industry gave, I might mention that early in the campaign a special meeting of the Central Iowa Association of Accident and Health Underwriters was arranged so that Mr. Edwin J. Faulkner, of Lincoln, Nebraska, representing the Woodmen Accident and Life Insurance Company and the Health Insurance Council, could set forth the reasons for the industry's opposition to Forand legislation. That meeting attracted a large audience.

In addition, a spokesman for the Medical Society was guest speaker at a meeting of the Iowa Health Insurance and Accident Association, attended by over 200 members and guests. His topic was "Forand Legislation." The enthusiasm of this gathering in support of medicine's opposition to this legislation is best described by mentioning that the speaker received a standing ovation.

Above all, a great deal of credit for whatever success we experienced in Iowa should go to the Woman's Auxiliary to the Iowa State Medical Society. It was most active, not only from the standpoint of the members' writing individual personal letters, but in assuming responsibility for contacting the most prominent non-medical women's groups in the state. Foremost among these were the American Association of University Women, the Iowa Federation of Business and Professional Women's Clubs, and the Iowa Federation of Women's Clubs.

Representatives of the Woman's Auxiliary attended practically all of the conferences that were held to plan strategy in connection with this campaign. Frequent communications were sent from the State Legislative Chairman of the Auxiliary, to all of the members of that organization. The ladies were tremendously helpful in the distribution of various AMA pamphlets on Forand legislation, and the legislative chairman in each county Auxiliary utilized the AMA anti-Forand kit in her planning. One of the larger county Auxiliaries established contact with 54 women's organizations, and also arranged a television panel program on an educational station, where the pros and cons of Forand-type legislation were discussed.

Many resolutions and letters to members of Congress from business and professional organizations were prompted by the Society and its Auxiliary at all levels. We have no adequate means of measuring the numbers of communications that were stimulated. State-organization resolutions were sent to the State Society, as well as to members of Congress, but individual letters and county organization statements were sent direct to the AMA or to Washington.

In a period of less than two months, one field secretary personally visited 57 county medical societies and was successful in organizing a grass-roots committee in each. In the remainder of the counties, committee organization was accomplished by ISMS officers or committee members whose homes are there, or by telephone contacts from Des Moines. In each instance, the county legislative contact man, appointed by the State Society, served as the coordinator.

It is estimated that two-thirds of the county societies passed resolutions opposing the Forand Bill. All of the larger county medical societies held special meetings where the problems of the aged were discussed, and we have reason to believe that at least 50 per cent of the county societies with limited numbers of members gave direct attention to the problem, too.

Over 100,000 copies of the AMA pamphlet "Political Medicine Is Bad Medicine" were distributed at the community level, in addition to thousands of copies of other pamphlets provided by the AMA.

At least 10 county medical societies sponsored public meetings attended by as many as 150 key people, including representatives of labor. Somewhat different methods were utilized, from county to county, in activating the programs.

Essentially, this sums up our approach, in a very abbreviated manner. The Iowa State Medical Society's success in organizing grass-roots support can be attributed to coordination and teamwork among the officers, committee members and staff in the task of informing physician members, and stimulating them to undertake programs of positive action at the local level.

We have attempted to utilize many of the same technics in promoting passage of a Kerr-Mills enabling act in Iowa. Whether or not we are successful will be determined during the next 30-60 days. The Iowa General Assembly is in session, and a bill has been introduced in both houses which, in its present form, is acceptable to us. We are optimistic, but certainly not overconfident.

Thank you for your attention.

SCIENTIFIC TESTS FOR DRUNKENNESS

"The Silent Witness," the sixth in a series of films on medicolegal subjects produced by the Wm. S. Merrell Company in cooperation with the AMA, deals with the chemical tests for intoxication. Its running time is 27 minutes, and it shows one of several commercial devices which effectively measure the alcohol in the breath.

At the initial showing of the film, before about 140 doctors, lawyers, law enforcement officers and municipal officials at the Academy of Medicine of Cincinnati, Judge Raymond E. Shannon, presiding judge of the Cincinnati Traffic Court, made a significant comment, indicating that a demon-

stration of the alcohol in a driver's breath may be insufficient evidence. He said: "A chemical test is certainly welcome, but it is not the conclusive factor, since the court is not concerned with the amount of alcohol, but with the influence it had on the driving ability of the defendant."

Prints of the film are available for showing before interested groups. Applications can be made to the AMA Film Library, 535 North Dearborn Street, Chicago 10.

ATTITUDE TOWARD PREGNANCY MAY INFLUENCE SUSCEPTIBILITY TO TOXEMIA

A woman's attitude toward her pregnancy may influence her physical well-being. According to PATTERNS OF DISEASE, the monthly Parke, Davis & Company publication for the medical profession, some investigators believe that emotional conflict may be important in the development of toxemia of pregnancy. These disorders are the leading cause of death among pregnant women, although the mortality rate from complications of pregnancy has dropped 55 per cent in the past 10 years.

In a survey of pregnant women, 67 per cent of those who developed toxemia felt pity for themselves and for women in general, whereas these feelings were nonexistent among patients who did not develop this complication. In the same survey, 77 per cent of patients with toxemia felt guilt toward their unborn babies, and 70 per cent associated pregnancy with deceit, shame or sin, as compared with only 6 and 7 per cent among healthy patients. Among patients who did not develop toxemia, 72 per cent considered procreation synonymous with womanhood, and 87 per cent expressed willingness to cope with the responsibilities of pregnancy, whereas the figures for toxemic patients were 37 and 33 per cent, respectively. A dramatic contrast between the two groups was revealed in connection with attitudes toward remaining pregnant. Among the toxemic patients, 58 per cent expressed ambivalence toward continuing their pregnancies, but only 1 per cent of the healthy women voiced such indecision. Curiously, a high percentage of both had wished to become pregnant—93 per cent of the toxemic patients and 96 per cent of the healthy ones.

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 23-26, 1961

Veterans Memorial Auditorium

Des Moines

Coming Meetings

(Continued from page 238)

May 15-19	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
May 16	**Treatment of Five Common Skin Diseases (Ninth in the Series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri
May 16-18	**Western Conference on Anesthesiology.** Sheraton Hotel, Portland, Oregon
May 16-20	**American College of Cardiology, Inc.** Biltmore Hotel, New York City
May 17-19	**American Association of Plastic Surgeons.** Commodore Hotel, New York City
May 18-19	**Eleventh Annual Colorado Intern-Resident Clinics.** University of Colorado Medical Center, Denver
May 18-19	**Proctology.** University of California, San Francisco
May 18-20	**American Association for the History of Medicine.** Shoreland Hotel, Chicago
May 18-20	**Medical Staff of Children's Hospital of the East Bay, Ninth Annual Clifford Sweet Seminar.** Hotel Claremont, Berkeley, and Children's Hospital of East Bay
May 18-20	**Nevada Chapter American Academy of General Practice.** Riverside Hotel, Reno
May 18-20	**New Hampshire Medical Society.** Wentworth-By-the-Sea, New Castle, New Hampshire
May 18-20	**"Proctologica Latina Collegium" Third International Meeting of Colon and Ano-Rectal Surgery.** Palais du Marshan, Tangier, Morocco
May 19-20	**Gerontology.** University of California at Los Angeles
May 19-20	**Management of Trauma.** Harbor Hospital, University of California at Los Angeles
May 19-20	**Preliminary Program, Annual Clinical Conference (Chicago Ophthalmological Society).** Drake Hotel, Chicago
May 19-21	**California Heart Association Annual Meeting and Scientific Session.** Disneyland Hotel, Anaheim
May 22-24	**Annual Meeting, American Thoracic Society.** Cincinnati, Ohio
May 22-24	**Minnesota State Medical Association Annual Meeting.** St. Paul Municipal Auditorium and the St. Paul Hotel
May 22-25	**American Orthopedic Association.** The Ahwahnee Hotel, Yosemite
May 22-25	**American Urological Association, Inc.** Biltmore Hotel, Los Angeles
May 22-25	**National Tuberculosis Association.** Netherland-Hilton Hotel, Cincinnati
May 22-26	**General Practice Review.** Cook County Graduate School of Medicine, Chicago
May 22-27	**International Congress of Legal Medicine and of Social Medicine.** Vienna, Austria
May 23-24	**American Bronchoesophagological Association, Inc.** Lake Placid Club, Lake Placid, New York
May 23-25	**American Laryngological Rhinological and Otological Society, Inc.** Lake Placid Club, Lake Placid, New York
May 23-25	**Massachusetts Medical Society.** Statler Hilton, Boston
May 24	**American Gastroscopic Society.** Drake Hotel, Chicago
May 24	**Memorial Hospital of Long Beach, Third Annual Medical Staff Symposium.** New Memorial Hospital, Long Beach
May 24-27	**Alaska State Medical Association.** Sitka-Mt. Edgecumbe, Alaska
May 25-27	**American Gastroenterological Association.** Drake Hotel, Chicago
May 25-27	**Water, Salts and Steroids.** University of California at San Francisco
May 25-28	**Florida Medical Association.** Americana Hotel, Miami Beach, Florida
May 26-27	**American Otological Society, Inc.** Lake Placid Club, Lake Placid, New York
May 26-27	**Common Emergencies in Clinical Practice.** University of California at Los Angeles
May 29-31	**American Gynecological Society.** The Broadmoor, Colorado Springs, Colorado

It Isn't Insurance

MORLEY CASSIDY

The Federal Trade Commission has been very active lately in prosecuting manufacturers who call their products by the wrong name, or make unwarranted claims about what they will do.

More power to it. But who is going to make Senators and Congressmen and bureaucrats live up to similar standards of plain honesty?

Specifically, who is going to make them stop talking about the various Social Security programs as "insurance" programs, and speaking of the contributors' "rights" to the promised benefits?

The question promises to become a lively one when Congress . . . takes up anew the question of making health-care for the aged a part of the Social Security system (with a corresponding increase in the nick taken from everyone's take-home pay).

DIGNIFIED "RIGHT"

Over and over, in the rump session . . . the word *insurance* kept cropping up in the speeches of Senators urging that health-care be put into the Social Security system. They insisted hotly that the aged should get health-care benefits as "a right." They should be able to receive them "with dignity," because "they had paid for them."

This is noble language. Unfortunately, it falls under the head of grossly deceptive language, of a kind that would bring the FTC pouncing down on a manufacturer.

It is charitable to suppose that the Senators and Congressmen who use such language are themselves deceived about the true nature of the Social Security program. It has been spoken of as "insurance" almost from its inception. The word appears in the name of the Old Age and Survivors' Insurance program.

SOCIAL SECURITY TAXES ARE NOT INSURANCE PREMIUMS

But it is not insurance. It carries no "rights" to anything except what Congress, from time to time, may grant as a gift. The contributions to it, deducted from pay, are not "insurance premiums" but a tax, pure and simple.

Who says so? The Secretary of Health, Education and Welfare says so. The Solicitor General of the United States says so. Finally, the Supreme Court says so.

In a little noted decision last June 20 the Supreme Court ruled finally on a question which has irked many real insurance men for a quarter-century.

The case was that of Nestor v. Flemming. Ephram Nestor, a Bulgaria-born industrial worker in Los Angeles, was deported in July, 1956, to his homeland, as a Communist. He had been a Social Security contributor since 1939 and was drawing old-age benefits when deported.

He drew two monthly checks after his deportation and wanted his benefits restored on the grounds that he "had paid for them."

His theory was that on which most discussion of Social Security is based: that he had been paying money into Social Security which would be held for him and, in his old age, given back with interest.

He was wrong, and the brief of the U. S. Solicitor-General, on appeal to the Supreme Court, leaves no excuse for any Senator, Congressman or bureaucrat ever again to speak so loosely about their product.

"The old-age monthly benefits program which Title II of the Social Security Act establishes is not a federally-administered 'insurance' program," Secretary Flemming declared in this brief.

NO ANNUITY

"The contribution exacted under the Social Security plan," he went on, "is a true tax. It is not comparable to a premium promising the payment of an annuity commencing at a designated age."

The Solicitor-General presented this version to the Supreme Court to explain why Nestor had no "right" to any benefits, and went on to say: "The 'Trust Fund' from which OASI benefits are paid is maintained by annual appropriations made by Congress. . . . Unlike private insurance companies, which essentially require reserves equal to the present value of all benefits, the Social Security program needs no such reserves, since it is assured of continuing participation through the exaction of taxes. . . . The beneficiary or prospective beneficiary acquires no interest in the fund itself."

Albert C. Adams, of Philadelphia, past president of the National Association of Life Underwriters and chairman since 1952 of the Association's Social Security committee, has long been a leader in the fight to insist that the government stop the improper use of language in referring to the Social Security program, and expects to redouble his efforts in the light of the Supreme Court's clear decision.

"In the business community," he says, "truth in advertising is enforced to permit the public

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Mr. Cassidy is assistant editor of the PHILADELPHIA EVENING BULLETIN, and this article appeared in the September 19, 1960, issue of that newspaper.

fairly to make up its collective mind as to the wisdom of patronizing the advertiser.

"In governmental matters, truth in advertising will likewise permit the public fairly to make up its mind as to the wisdom of retaining or expanding, or restricting, existing legislation. It is as patently unfair for a governmental agency to expand on the basis of false and misleading advertising as it is for a business competitor to expand on the same sort of misrepresentations."

THE COMMON COLD

A prevalent view, even within recent years, has been that there is a common-cold virus to which only man is susceptible and which causes recurrent symptomatic infections without establishing immunity in the host. This concept now appears to be far too simple.

Donors with naturally acquired typical common colds in the months from September to May have contributed specimens of nasal secretion. The secretions have been filtered free of bacteria and cells, and stored at –90° F.

Students ranging in age from 18 to 48 have been challenged with a nasal secretion, usually diluted 100 times; a virus grown in tissue culture; or a salt solution. Symptoms were recorded for each day of the following week.

Nasal discharge was the symptom most uniformly recorded. It was the only symptom that was rated as "severe." Sore throat, malaise, postnasal discharge, headache, cough and sputum were frequent symptoms of moderate severity. Feverishness and chilliness were reported infrequently.

Bacteriologic cultures of the nasal specimens before and on the fourth, seventh and ninth days after challenge were made for the detection of pathogenic microorganisms in the respiratory secretions. Some of the volunteers harbored staphylococci, hemolytic streptococci or pneumococci in their prechallenge specimens. There was no apparent relationship between the presence of these microorganisms and the development of clinical symptoms.

Among a control group of volunteers who received uninfected buffer solution, there was a direct and statistically significant relationship between the usual number of colds per year reported by the subject and the likelihood of his developing symptoms of a cold in the experiment. Thus, among 23 subjects who reported five or more colds per year and who had received the noninfectious control inoculum, 26 per cent developed a cold according to the criteria used in the experiments. Among the subjects who reported fewer natural colds and received uninfected material, there was a proportionately smaller number of experimental colds.

Attitudes exhibited before challenge showed that cold symptoms were less likely to be reported by individuals who (1) did not believe they would develop a cold, (2) thought that emotional status did not influence physical status, and (3) reported feeling no concern or worry over anything going on in their lives at the time of experimental challenge. A positive response to these three suggestions made it more likely that the individual would report cold symptoms.

Among uninfected subjects, chilling did not activate latent viruses, with the production of a clinical cold; among subjects who received a uniform challenge, chilling did not increase the susceptibility to clinical infection. Previous tonsillectomy had no influence on susceptibility or symptoms, nor did the smoking history of the person.

DISCUSSION

The causative agents of the common cold appear to be several, perhaps many, different viruses. Each of the viruses can produce a variety of clinical syndromes, commonly classified under categories of "common cold," "undifferentiated upper-respiratory infection" and "flu." The common-cold viruses cause afebrile, acute coryza in the great majority of persons. With a few exceptions, these viruses have not been isolated, named or well characterized.

The strong positive correlation between the usual number of colds per year and symptomatic reaction to an innocuous instillation appears to establish a wide range of difference in the pronenesses of persons to develop rhinorrhea or coryza. The data will not permit a conclusion as to whether physiologic or psychologic facts are dominant. On either basis, it is surprising that among the subjects who were hyperreactors to an uninfected solution, there was not greater susceptibility to clinical illness from a secretion containing an infectious agent.

For centuries, men have associated the common cold with environmental chilling. The present data seem adequate for the conclusion that the basis of the association is not the direct activation of latent viruses by physical cold or physiologic reaction to chilling, since these factors did not produce colds without infection.

Under the concept that the common cold is caused by many specific agents, each of which elicits an adequate immune response, the likelihood of discovering a predominant common-cold virus that maintains this role for a long time is quite unlikely. If this is the case, the logistics for immunologic control of the common cold may be very difficult.

—Abstracted from Jackson, G. G., Dowling, H. F., Anderson, T. O., Riff, L., Saporta, J., and Turck, M.: Susceptibility and immunity to common upper respiratory viral infections—common cold. ANN. INT. MED., Oct., 1960.

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

KEY AND CONWELL'S MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS, SEVENTH EDITION, ed. by *Fred C. Reynolds,* M.D., and *H. Earle Conwell,* M.D. (St. Louis, The C. V. Mosby Company, 1961. $27.00).

CARDIOVASCULAR SURGERY, A MANUAL FOR NURSES, ed. by *George H. Peddie,* M.D., and *Frances E. Brush,* R.N. (New York, G. P. Putnam's Sons, 1961. 2.75).

CARDIOVASCULAR DYNAMICS, SECOND EDITION, by *Robert F. Rushmer,* M.D. (Philadelphia, W. B. Saunders Company, 1961. $12.50).

CURRENT THERAPY, ed. by *Howard F. Conn,* M.D. (Philadelphia, W. B. Saunders Company, 1961. $12.50).

A SYNOPSIS OF CONTEMPORARY PSYCHIATRY, SECOND EDITION, by *George A. Ulett,* M.D., and *D. Wells Goodrich,* M.D. (St. Louis, The C. V. Mosby Company, 1960. $6.50).

RADIATION PROTECTION AND RECOVERY, Vol. 7, ed. by *Alexander Hollaender.* (New York, Pergamon Press, Inc., 1960. $10.00).

SURGERY FOR NURSES, SEVENTH EDITION, by *James Moroney,* M.B., Ch.B., F.R.C.S. (Baltimore, The Williams & Wilkins Company, 1961. $7.50).

INFORMATION PLEASE! FOR WOMEN ONLY, by *Alfred Dreyfus.* (New York, The Vantage Press, Inc., 1961. $7.50).

BOOK REVIEWS

EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE AND THE PHYSIOLOGY OF DIGESTION, by *W. Beaumont,* M.D., originally published in 1833. (New York, Dover Publications, Inc., 1959. $1.50).

The Dover Publications are paper-backed reproductions of famous scientific books which have stood the test of time. The present edition is an unabridged and unaltered reproduction of the original volume published in 1833, with a rather lengthy preface by Sir William Osler.

Of course, the work speaks for itself. One has only to transport himself, in imagination, to the rugged island of Mackinac, and climb halfway up the hill to the Fort, to be in Dr. Beaumont's office and dream of the almost incredible feat which Dr. Beaumont performed in saving the life of Alexis St. Martin, who had been shot through the back and abdomen with a shotgun. He followed that miracle with others even more significant for medicine—his years of crude, though accurate, experimentation upon the man whom he had saved—accurate experiments in an age before experimentation! Dr. Beaumont's experiments are all the more to be admired when one takes into account that he was performing them on an unwilling subject, on his own time and at his own expense.

How wonderful it would be if more of us doctors could at least approximate Dr. Beaumont's devotion to research and to the medical profession! Nowadays, we are too busy with minutiae to see the forest for the trees. The least we can do is to read about the past and to dream about the days when some giants grew head and shoulders above their confreres. And the book costs only 12 bits!—*Daniel A. Glomset,* M.D.

HUMAN PITUITARY HORMONES (Ciba Foundation on Colloquia Endrocrinology, Vol. XIII), ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor,* B.Sc. (Boston, Little, Brown and Company, 1960. $9.50).

Dr. Li, one of the contributors to this Ciba Foundation colloquium, points out that growth hormone preparations are now available in a high degree of purity from six species of animals: beef, sheep, whale, pig, monkey and man. Hormone preparations from each of these have distinct, characteristic differences, and even those from closely related species such as man and monkey are not identical.

Immunologic studies on human growth hormone have demonstrated that rabbit-produced antiserum is effective against human growth hormone, both *in vitro* and *in vivo.* The purpose was to develop a direct method of assaying human growth hormone sufficiently sensitive to measure growth hormone in the serum of patients with pituitary growth disturbances.

In consideration of GH and body metabolism, it is pointed out that GH increases mobilization of body fat, with the specific findings of ketosis, lower respiratory quotient, diminution of fat stores, and increase of fatty acids in the plasma. Human GH has been found to have a prompt anabolic effect on protein metabolism. It increases urinary excretion of calcium, causes retention of sodium and of chloride, and produces diabetogenic effects in diabetics.

Later sections of the volume include articles on follicle-stimulating hormone, interstitial-cell-stimulating hormone, adrenocorticotropic hormone, melanocyte-stimulating hormone and thyrotropic hormone activity. The injection of follicle-stimulating hormone into young amenorrheic women produces polycystic enlargement of the ovaries, increases urinary excretion of estrogen, and causes endometrial proliferation.

In the general discussion that concludes the volume, the five states in an endocrine investigative program are again enumerated. They are (1) extirpation experiments, (2) the preparation of crude extracts, (3) chemical isolation and analysis, (4) the synthesis of the active principle, and finally (5) the elucidation of the mechanism of action. It is pointed out that the papers in this symposium cover all five areas of investigation. One interesting suggestion is that it may be possible to use tissue culture to grow tumors of the pituitary that are producing excessive GH, and

thus to make supplies of the hormone more readily available.

The Ciba Foundation Colloquia on Endocrinology serve admirably in bringing together findings which have been made in diverse fields of investigation but which relate to a central subject—in this case the human pituitary hormones.—*John T. Bakody,* M.D.

CLEFT LIP AND PALATE REHABILITATION, by *William H. Olin,* D.D.S., M.S. (Springfield, Illinois, Charles C Thomas, 1960. $9.00).

Dr. Olin's book is based on extensive experience in cleft-palate rehabilitation. It is written for the specialists who are particularly interested in the subject. He emphasizes that adequate rehabilitation of cleft lip and palate patients frequently necessitates the coordinated team work of physicians, dentists, speech therapists and personnel in allied professions.

The author discusses the incidence, embryology, etiology and classification of clefts. He includes a useful chapter on proper feeding methods. Some of the commoner surgical procedures for the repair of lip and palate are briefly presented with diagrams and photographs. A concise chapter on the oral structures important as speech mechanisms has been contributed by Duane C. Spriestersbach, Ph.D. He discusses problems of speech sounds in cleft patients.

Over half of the book is devoted to problems of orthodontic treatment and cleft-palate prosthesis, along with the methods which the author has found particularly effective in palate rehabilitation.

It is recommended to those who have a particular interest in the subject.—*Chester C. Woodburn, Jr.,* M.D.

THE HAND: A MANUAL AND ATLAS FOR THE GENERAL SURGEON, by *Henry C. Marble,* M.D., F.A.C.S. (Philadelphia, W. B. Saunders Company, 1960. $7.00).

This is the most valuable kind of medical book. Dr. Henry Marble is a general surgeon of mature judgment and ample experience who has had a lifelong interest in surgery of the hand. In this book, he undertakes to tell other general surgeons just how he himself treats injuries and other surgical conditions of the hand.

The style is direct and down to earth, and the author is dogmatic only to the degree necessary for effective teaching—something that Dr. Marble has done for many years at the Massachusetts General Hospital. The young surgeon can confidently take the advice presented.

The first 78 pages are devoted to the anatomy (illustrated by many original sketches and cross sections of the forearm and hand at various levels) and physiology of the hand, and to methods of examination. (Examine the hand," Dr. Marble insists, "not the wound.") The remaining portion of the book covers the following topics: Closed Injuries, Open Injuries, Splints and Splinting, Infections, and Tumors.

It is evident that the author has a special interest in fractures, and he presents his subject in a simple and straightforward manner. He employs plaster splints, either singly or in pairs, and rarely uses the (dangerous) circular cast. He emphasizes the importance of the compression dressing in preventing edema, and the importance of early motion of the injured parts in restoring normal function to the injured hand.

This is a compact book, and its 197 pages are packed full of helpful information and sound advice which will be of great value to students, residents and surgeons.—*Julian M. Bruner,* M.D.

ATLAS OF OBSTETRIC TECHNIC, by J. Robert Willson, M.D. (St. Louis, The C. V. Mosby Company, 1961. Deluxe edition $14.50; Standard edition $12.50).

Every hospital that cares for obstetrical patients should possess and use this book—not keeping it filed and forgotten in the medical library, but keeping it handy for study and quick reference somewhere in the doctors' room in the labor suite. It is not a theoretical, academic textbook. Rather, it is a detailed atlas—general and specific—of delivery technic, explained, charted step by step, and profusely illustrated and diagramed.

Dr. Willson writes clearly and concisely. More than that, it is obvious that he precisely directed Daisy Stilwell's illustrations. Most of these are pen-and-ink, but some are wash, and there are photographs and x-ray reproductions wherever such illustrations are typical and appropriate. Thus, there is complete word-and-picture cohesion and clarity—embracing detailed directional manipulation instruction, comparable (and this is not entirely facetious) to those A-B-C picture series in the best craftsmen's handbooks.

The welcome and unique feature of this volume, however, is that Dr. Willson's concise textual paragraphs on left-hand pages are accurately keyed and correlated to the illustrations on the opposite leaves. One is required to do no groping, page-turning, or up-and-down hunting for the drawings that match paragraphs A, Z or any in between.

Forceps operations for all positions are clearly presented. The management of breech deliveries (also face, brow, etc.) is well explained, and indications and technic for abdominal delivery, including cesarean hysterectomy, are likewise well discussed and illustrated. There are fine chapters on the selection of anesthetic agents for the different procedures.

The book has still another attraction. Its first 14 pages comprise an outline for developing the ideal obstetrical department—its equipment, and the functions and duties of each of its members. This section ought to be read by the personnel of every hospital—especially of an institution that is planning new construction or remodeling its obstetrical department.

ATLAS OF OBSTETRIC TECHNIC has this reviewer's unhesitating and unreserved admiration and endorsement.—*H. Kirby Shiffler,* M.D.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

Iowa Chapter of the American Academy of General Practice

IOWA CITY REFRESHER COURSE

The Sixth Annual Refresher Course for the General Practitioner was held at University Hospitals, in Iowa City, February 21-24, 1961. The faculty of the S.U.I. College of Medicine conducted a series of lectures on surgery, pediatrics, obstetrics and gynecology, and many other aspects of medicine. The guest speakers on the program were Charles W. McLaughlin, Jr., M.D., F.A.C.S., of the University of Nebraska College of Medicine, and Willis Brown, M.D., of the University of Arkansas College of Medicine. The small-group conferences were especially well received, and several doctors expressd a desire to attend all of them—something which, of course, was physically impossible. These meetings are one indication that the S.U.I. College of Medicine is desirous of maintaining a high level of practice among Iowa family physicians. Academy members were able to register for a small fee, and thus could take advantage of a rich intellectual experience for a very low cost, and at the same time secure their hours of postgraduate education required for maintaining Academy membership.

There was a total registration of 220 physicians, of whom 172 were Iowa Academy members, and 27 were AAGP members from South Dakota, Nebraska, Indiana, Michigan, Kentucky, Illinois, Wisconsin, Minnesota, Missouri and Washington. Twenty-one non-members paid the full fee for the course.

The guests of honor at the banquet at the Iowa City Elks Club on Thursday evening were the junior and senior students at the medical school. Each senior student was given a kit that had been prepared by the AAGP, containing a sample copy of GP and material explaining the need and advantages of general practice. A special subscription blank was included, offering the student a subscription to GP at a reduced rate, with the Iowa Chapter paying the difference. Seventy juniors and 74 seniors were present at the banquet, and during the social hour while oysters were being consumed, they had an opportunity to converse with the Academy members attending the Refresher Course. This is the only way the students can be told that Iowa's general practitioners are an active group and are anxious to have them stay in Iowa after they graduate.

Dr. V. L. Schlaser, president-elect of the Iowa Chapter, introduced the presidents of the Junior and Senior Classes, and Dr. Donald Kast brought greetings from the American Academy. Dr. Carl Winters, a minister who appeared under the sponsorship of General Motors Corporation, gave an inspiring talk on the service that physicians can render to society.

Those who attended the meeting seemed well satisfied with the quality and variety of the program, but if there are physicians who wish to offer suggestions for improving future presentations, Dr. John Gius, director of postgraduate education at the S.U.I. College of Medicine, will be happy to receive them.

IOWA CHAPTER COCKTAIL PARTY

(During the ISMS Annual Meeting)
6:00 to 8:00 p.m., Monday, April 24
Savery Hotel, Des Moines

All general practitioners, their wives and their friends are invited. Tickets ($1 each) may be bought at the Academy booth in the Auditorium.

SPRING POSTGRADUATE CONFERENCE

Iowa Chapter
American Academy of General Practice
New Inn, Lake Okoboji
June 22-24, 1961

Make your reservations now with the New Inn for yourself and your family, and plan to attend.

THE DOCTOR'S BUSINESS

Turnpike Bonds

HOWARD D. BAKER
WATERLOO

Financially, the status of turnpike bonds improved appreciably during 1960. However, because of a few bad experiences with these securities in the past, most investors are still a bit skeptical about them.

Every turnpike issue improved its price in 1960, primarily because of a gradual decline in the yields of all bonds. Florida Turnpike Bonds, for example, yielded 3.89 per cent at the beginning of last year and yielded only 3.39 per cent at the close, in consequence of an increase in price from 83½ to 96 over the same period.

With the single exception of Mackinac Bridge, every turnpike issue increased its interest coverage during 1960. One determines interest coverage by dividing *net operating revenue* by fixed interest charges.

Although prices have improved and interest coverage is greater in most cases, several of these obligations aren't yet by any means gilt-edged. The West Virginia Turnpike is currently covering only two-thirds of its interest payments and is 18 months in arrears. Chicago's Calumet Skyway is paying interest out of reserves. As for all of the issues at the bottom of the accompanying table, it is a race between revenues and reserves. Revenue must rise fast enough to cover interest, so that reserves aren't altogether exhausted.

The turnpike bonds listed at the top of the table are sound commitments, however, offering ample interest coverages and reasonably attractive yields.

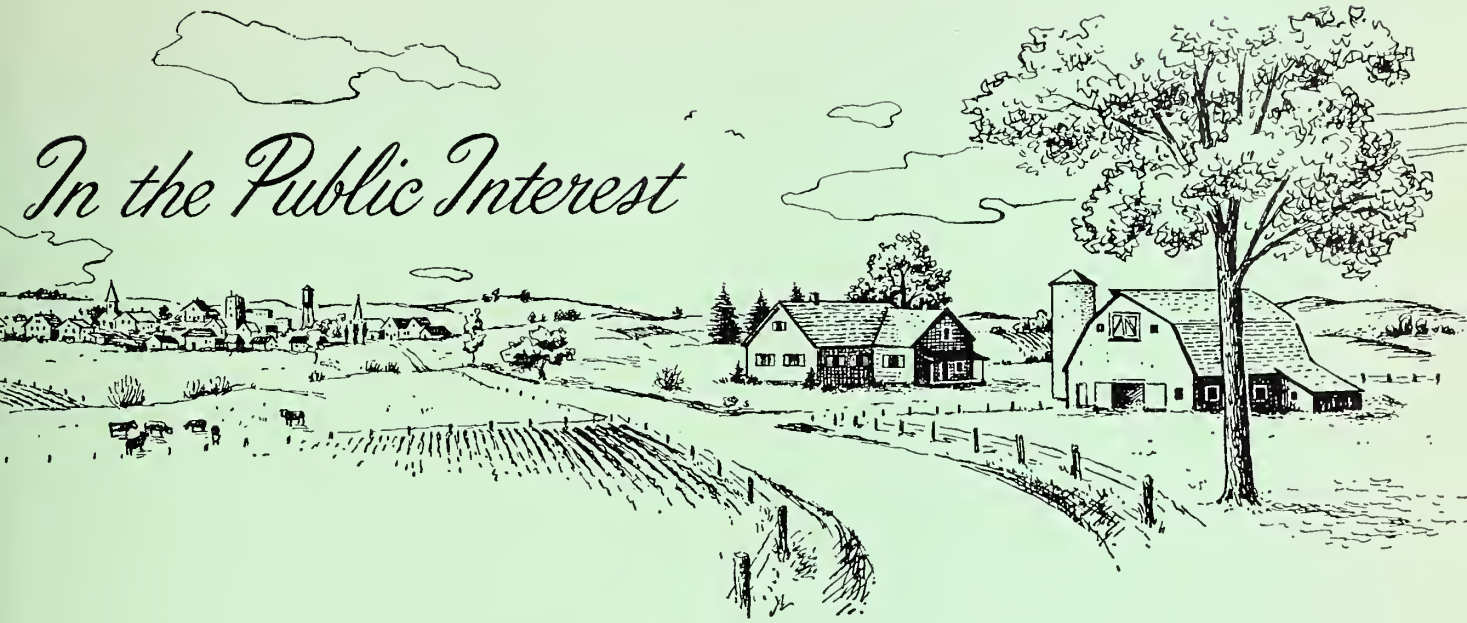
The bond market is relatively stable at the present time, with yields averaging between 3⅛ and 3⅞ per cent for high-quality issues. Consequently, these income-tax-exempt securities continue to offer attractive commitments for the "fixed dollar" portion of an investment portfolio. The table at the bottom of this page illustrates the importance of their tax-free status. Indeed, the tax-free feature increases in attractiveness as one's income increases.

EQUIVALENT YIELDS OF MUNICIPALS AND INDUSTRIALS FOR INVESTORS IN VARIOUS INCOME-TAX BRACKETS

Municipal Bond Interest Rate	$20,000 to $24,000	$28,000 to $32,000	$36,000 to $40,000	$40,000 to $44,000
3.25%	5.24%	6.13%	6.91%	7.39%
3.50	5.65	6.60	7.45	7.95
3.75	6.04	7.08	7.98	8.52
4.00	6.45	7.55	8.51	9.09
4.25	6.85	8.02	9.04	9.66

TURNPIKE BONDS

Issues With Adequate Interest Coverage	Market Price 1/1/'60	Market Price 12/30/'60	Coverage	Current Yield
Penna. Turnpike 3¼'s (1988)	100½	102½	7.00	3.17%
Md. Bridge & Tunnel 3's (1994)	86	95	2.97	3.13
New Jersey Turnpike 3⅜'s (1988)	91	97	2.36	3.48
Florida Turnpike 3¼'s (1995)	83½	96	1.97	3.39
Ohio Turnpike 3¼'s (1992)	84½	93½	1.87	3.48
Miss. River Bridge 3.6's (1994)	90	98	1.69	3.67
Virginia Turnpike 3's (1994)	83	92½	1.66	3.25
Jacksonville Expressway 4¼'s (1992)	101	103	1.60	4.13
Issues With Skimpy to Inadequate Coverage				
Mackinac Bridge 4's (1994)	85½	87½	1.02	4.57
Calif. Toll Bridge 3 7/8's (1992)	85	96	1.02	4.04
Illinois Toll Road 3¾'s (1995)	71¼	87¼	.90	4.27
Richmond-Petersburg Turn. 3.45's (1995)	75½	83	.88	4.16
Kansas Turnpike 3⅜'s (1994)	72	75½	.83	4.47
W. Va. Turnpike 4⅛'s (1989)	54	57½	.64	7.17
Penna. Turnpike 3.1's (1993)	80	86¾	.49	3.57
Calumet Skyway 3⅜'s (1995)	45	56	.42	6.03



Physicians Can Help in

Preventing Overutilization of Health-Care Insurance

Physicians, along with other responsible citizens, have a duty to help save our country from further controlism, a situation in which people would have far less liberty than they now possess —less freedom to make their own decisions and to spend their money for whatever they choose. They must continue, and indeed redouble, their efforts at impressing Americans generally with the advantages of the voluntary way, but in addition they must take the lead in preserving and improving a particular segment of the voluntary scheme of things—voluntary health-care insurance.

Voluntary health-care insurance is offered to the American people for two purposes: (1) to distribute the financial burdens of really serious illness so that, insofar as possible, they may not fall disproportionately upon any one family or individual; and (2) to enable each family or individual to prepay such health-care costs in easy installments, thus freeing the patient from money worries during illness and convalescence.

This health-care insurance has met a real need, and has met it to the almost complete satisfaction of the policyholders. As of now, between half and three-quarters of our 180,000,000 people are covered by one type of plan or another, and their numbers are still growing. Yet, the system of voluntary health insurance is seriously threatened. Premiums are in danger of rising so high that the people who need protection most may no longer be able to pay for it.

THE THREATS THAT VOLUNTARY HEALTH-CARE INSURANCE FACES

Here are some of the factors that are continually producing increases in health-care insurance premiums.

Unnecessary hospitalization, for the most part, is a consequence of the way in which most hospital and medical insurance policies have been written. X-ray examinations and laboratory tests are regarded as medical rather than as hospital functions, but many people for whom these services might quite satisfactorily be performed in doctors' offices insist upon being hospitalized for them, simply because their policies will pay the costs only when they are hospital inpatients.

It also sometimes happens that patients are hospitalized "for observation," either because they need "a rest" or because they will then be housed together where the physician can visit and examine them more conveniently.

Unnecessarily lengthy hospitalization, in most instances, is the consequence of a lack of convalescent-care facilities or of the fact that insurance fails to cover convalescent-care services. Either the patient's relatives delay in making adequate provision for him at home, or the patient

is unable or merely reluctant to pay the charges at a nursing home and his health-care policy won't pay his bills there. In such cases, insurance companies are forced to continue financing elaborate and expensive care far out of proportion to the patient's needs, simply because there seems to be nowhere for him to go when he leaves the hospital.

Superfluous procedures have sometimes been ordered either because patients have specifically requested them or because physicians have assumed that in the presence of health-care insurance, all diagnostic and treatment aids could be utilized. Actually, of course, the money that an insurance carrier can pay out can never exceed the money it has received in premiums. Every penny of it comes from the pockets of the insured, and the more the pay-out, the higher the rates must rise. Occasionally, alternative diagnostic and treatment technics are appropriate for the patient's condition, one of them more expensive but not necessarily more efficacious than the other. In such instances, doctors must remember that the insurance company's funds are in a very real sense the patient's own, and that economy is essential.

Duplicate coverages, by means of which growing numbers of people are finding it highly profitable to be ill, are perhaps the most serious threat of all. In some instances these people benefit from an overlapping that was forced upon them. A husband and wife, for example, may be employed by two different firms, each of which either provides family hospital-surgical insurance as a fringe benefit or insists upon making it a payroll-deduction item. Such a couple could most readily be excused for collecting double the amount of their actual expenses for each illness. But there are many profiteers who buy policies from several companies or from the same company under their own and one or more fictitious names. Such individuals are almost certain to become malingerers.

ORGANIZED MEDICINE AND INDIVIDUAL DOCTORS CAN CURTAIL THESE ABUSES

Individually or through medical societies, physicians can help in putting an end to most of these evils.

Changes in insurance coverages are needed, and it seems probable that physicians can do a great deal toward securing them. The first and most necessary change must be to make doctor's-office diagnostic procedures a standard coverage in every subscriber's policy, rather than an additional-premium extra. There was a time, no doubt, when most people would have preferred going to a physician's office for their tests and x-rays, but nowadays when all but the self-employed continue to be paid while ill and away from work, only the rare individual will undertake to pay an extra premium so that he may go to the doctor, rather than have the doctor come to him while he rests and is waited upon in the hospital. As a matter of fact, the only customers to whom Iowa Blue Shield has thus far made a concerted effort to sell its extra-premium diagnostic-service rider are those firms that buy health-care insurance for their employees.

Physicians also want deductible or coinsurance features made universal. By such means, insurance premiums can be kept down through sparing carriers the disproportionately great expense of paying a great many minor claims, and by giving policyholders an incentive for staying out of the hospital when they really don't need to go there, for hesitating to request de luxe services, and for leaving the hospital just as soon as their physicians think it safe for them to do so. Doctors would also like to see insurance cover convalescent care in comparatively low-cost facilities.

Doctors will help in educating the public to the advantages of "major medical" health-care insurance, a type of coverage which is available at modest premiums, but which provides protection against the really big bill that might otherwise bankrupt people in average financial circumstances. In addition, they will try to get carriers to reinstate a clause which sales competition once forced them to withdraw—a clause absolving the insuror from more than a proportional share of liability for claims if the insured is covered by more than one policy. The General Assembly of Iowa could be asked to make a law requiring such a clause, but perhaps the carriers can be persuaded to take this action for themselves. Standard fire insurance contracts all contain such a provision.

Individual physicians, of course, can accomplish a great deal in checking the overuse and misuse of health-care insurance. Henceforth, patients will have considerable difficulty in finding doctors who will cooperate with them in collecting from more than one insurance company, who will order their hospitalization for x-rays so that the insurance company will have to pay the costs, or who will let them remain hospitalized when they have recovered sufficiently from illness or following surgery so that they no longer really need the intensive care that the hospital is equipped and staffed to provide. Furthermore, alert to the threat that overutilization poses, physicians are intent upon avoiding whatever unnecessary or otherwise superfluous hospital and medical insurance claims they may, in the past, have occasioned.

The Iowa State Medical Society, through its field staff, has arranged for the wide distribution of a pamphlet entitled "Let's Use, Not Abuse, Health Insurance" in physicians' offices and in industrial plants throughout the state. Furthermore, it has set up a committee of physicians to plan methods of stemming overutilization by individuals who fail to respond to appeals of that sort.

STATE DEPARTMENT OF HEALTH

COMMISSIONER

THE AGING DRIVER

For a number of years, accidents have ranked fourth nationally among the causes of death, and in Iowa it has been the leading cause of death in all age groups. Each year, we are becoming increasingly aware that research and education in all aspects of accident prevention must become another function of public health work. Today, the aging driver is a significant factor in traffic problems, and he will become an even more important factor, since the numbers of elderly people are growing faster than are the total numbers of drivers.

Motor vehicle administrators say that the chances for the aging driver's staying on the road are good if he acknowledges the limitations that have been imposed upon him by his advancing age and if he agrees to drive within them. It is the driver's current performance in traffic, rather than his chronological age, that should determine whether he is fit to drive.

Clearly, the numbers of aging drivers are going to increase, and more attention and emphasis must be given to their many problems and special needs. The following are the areas in which they tend to get into difficulty:

1. During turning movements.
2. When there is a question regarding right-of-way.
3. In situations where a high degree of perception, problem-solving ability and instantaneous reaction are required.

Because elderly people seem to have trouble with these aspects of driving, and because their problems increase as they grow older, there is a need for a special Aging Drivers' Program, or a special Aging Citizens' Traffic Program. The latter would include pedestrian problems as well as those of elderly drivers. The time for starting these programs is NOW!

Burton W. Marsh, director of the Traffic Engineering and Safety Department of the American Automobile Association, Washington, D. C., recommends the following 12 points for aging drivers, to help make sure that they keep out of trouble and that they continue to enjoy driving.

Since driving often provides for interesting and purposeful activities of all kinds, it is natural that most aging drivers wish to go on driving. Public policy should aid them in continuing to drive as long as their driving competence remains adequate.

Suggestions for Elderly Drivers

1. Get your physician's advice concerning your driving. He may, for example, urge you to avoid heavy or fast traffic, or night driving.

2. Be sure your car is kept in tip-top condition as regards its safety features.

3. Keep yourself in good condition. Drive only when you feel "up to it."

4. Keep on the alert. You don't want any careless or bad driver to cause you trouble.

5. Take it easy and enjoy your trips, short or long. On long trips, make frequent stops, WELL OFF THE ROADWAY.

6. Choose the less-used, quieter routes.

7. Plan every trip, short or long, in advance. By so doing, you can usually avoid heavy traffic, high-speed routes or multi-lane arteries, if you are uncomfortable on them. Be willing to go around congested areas or zones in which you don't feel secure as a driver.

8. Keep your windshield, headlight lenses and eyeglass lenses spotlessly clean. Dirt on any of these interferes with good night vision more than most people realize.

9. Set up a personal project of updating your traffic knowledge. You can get ready help from police, automobile clubs, traffic committees and safety councils. Gather traffic and safety materials, and study them.

10. Join a driver-improvement class, if your town has one. If it doesn't, urge that one be set up.

11. Have a driving instructor check your driving and make suggestions. He can help you "polish up" your driving skills.

12. Take reaction-time and other driver tests, as a means of finding out how you rate and what you can do to offset any particular in which your rating is not tops. Be sure to have your night vision and glare resistance tested.

TRICHINOSIS

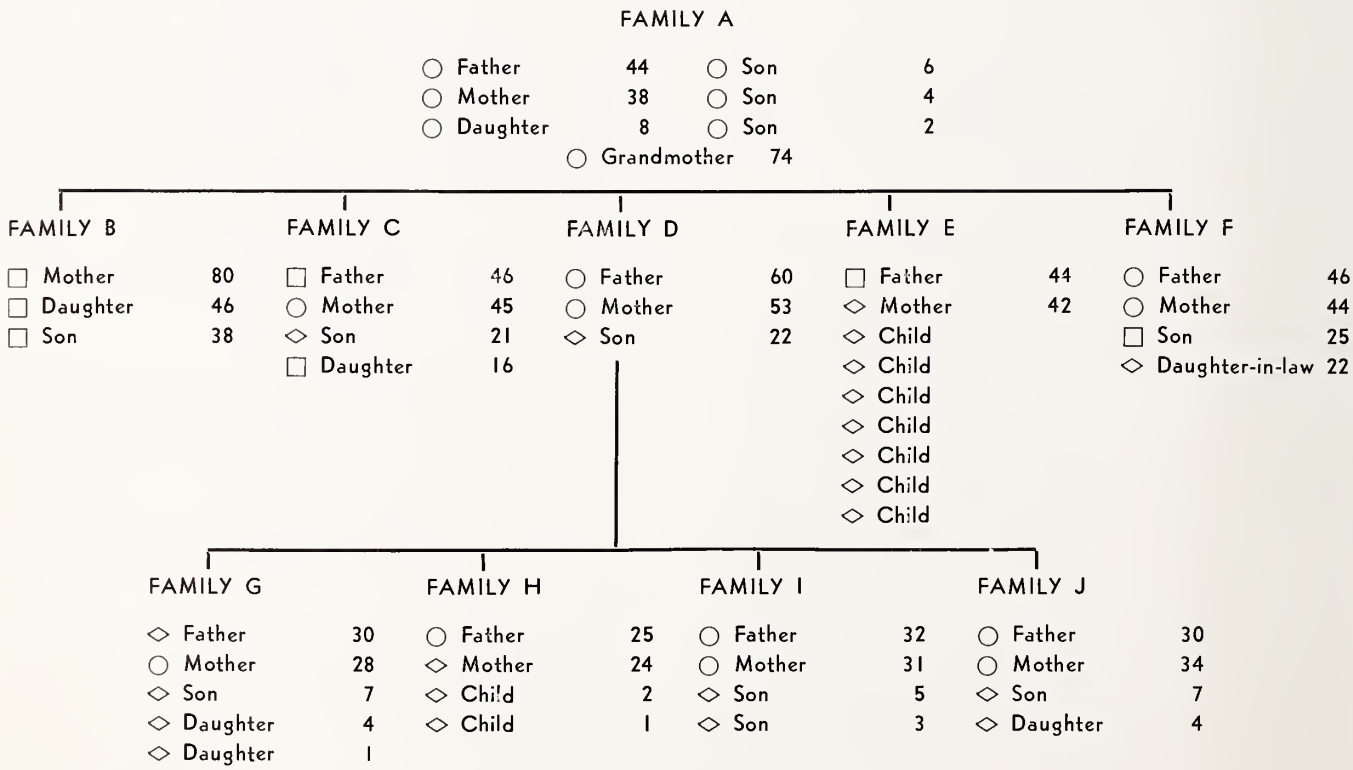
The accompanying diagram illustrates a recent outbreak of trichinosis among members of several related families and their friends, in five Iowa counties. It was caused by eating *uncooked,* home made, smoked pork sausage.

On December 1, 1960, family A purchased four pieces of fresh pork shoulder weighing a total of 35 lbs., and 6 lbs. of beef, from a market that regularly retails fresh pork from three large packers. The family ground the meat, mixed the beef and pork, added seasoning and stuffed it into natural casings about ¾″ in diameter. The sausage was placed in a small smokehouse and was smoked each day and a part of each night until December 7, at which time the family started eating it without cooking. Several members of the family ate small amounts of it intermittently during the following two weeks. During that period, portions of the sausage were given to families B, C, D, E and F. Family D, in turn, gave some to families G, H and I. Family J ate one meal of the sausage at the home of family D. Thus, the sausage was eaten by 25 members of 10 families between December 8 and December 26. By January 8, a total of 18 persons were ill with trichinosis. The severity of the illnesses varied from mild to severe. Five persons were hospitalized. Complications developed in two cases—one case of nephritis and one case of pneumonia. All patients are recovering.

Seven persons ate the sausage but did not become ill. The sausage eaten by family B in moderately small amounts and by family C (a moderately small amount by the father and a small amount by the daughter) had been frozen in a home freezer (temperature unknown) for about two weeks, and some of the trichina may have been inactivated. It is known that a temperature of 5° F. for 20 days or of –10° F. for 10 days will kill the worms. The father in family E ate a large amount of it, but only after it had been fried—well-done. The son in family F ate a very small amount.

Trichinella spiralis were found in specimens of the sausage examined at the State Hygienic Laboratory. Of 11 samples examined, the number of parasites per gram of sausage varied from 0.4 to 4.6 (12 to 138 per ounce). The number of parasites varied from 1.5 to 4.6 in different portions of the same ring of sausage. It is likely that not all pieces of the pork that were purchased to make this product were infected, and that the infected pork was not evenly distributed throughout the batch of sausage. The unevenness of this distribution may have been related to the variations in the severity of the disease, and may explain why some persons did not become ill.

Although the incidence of trichinosis in hogs is very low and is decreasing, this outbreak emphasizes that pork should be cooked. Pork is a highly nutritious, tasty food, but it always should be cooked *well-done* before it is eaten.



MORBIDITY REPORT FOR MONTH OF FEBRUARY, 1961

Disease	Feb. 1961	Jan. 1961	Feb. 1960	Most Cases Reported From These Counties
Diphtheria	0	1	1	
Scarlet fever	365	231	291	Clay, Jefferson, Johnson, Polk, Woodbury
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	402	250	125	Dubuque, Polk, Scott
Whooping cough	8	11	4	Polk, Pottawattamie
Brucellosis	13	14	40	Polk, Scott
Chickenpox	1073	1017	742	Des Moines, Dubuque, Linn, Polk, Pottawattamie
Meningococcic meningitis	0	0	1	
Mumps	608	577	399	Des Moines, Dubuque, Polk, Pottawattamie
Poliomyelitis	0	0	1	
Infectious hepatitis	195	94	48	Boone, Polk, Pottawattamie, Scott, Woodbury
Rabies in animals	20	17	13	Dallas, Hardin
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	33	23	36	For the state
Syphilis	109	78	83	For the state
Gonorrhea	114	92	83	For the state
Histoplasmosis	0	0	3	
Food intoxication	0	0	0	
Meningitis (type unspecified)	1	2	4	Boone
Diphtheria carrier	0	0	5	
Aseptic meningitis	0	0	0	
Salmonellosis	4	17	1	Polk
Tetanus	0	0	0	
Chancroid	1	0	0	Cerro Gordo
Encephalitis (type unspecified)	0	0	0	
H. influenzal meningitis	0	0	0	
Amebiasis	0	1	0	
Shigellosis	9	5	9	Polk
Influenza	17	14	9890	Cass, Dickinson

FILMS ON PHYSICAL DIAGNOSIS

A series of 16-mm color and sound motion pictures about various aspects of physical diagnosis is now available for rental or purchase from Wayne State University College of Medicine, in Detroit. The project was sponsored by Ciba Pharmaceutical Products, Inc., but none of the firm's products are mentioned. The films were reviewed favorably in the February 4, 1961, issue of J.A.M.A.

All requests for showing or purchase should be addressed to the Audio-Visual Utilization Center at Wayne State University.

NO IMMEDIATE THREAT OF FLU EPIDEMIC

Dr. Luther L. Terry, surgeon-general designate of the U.S.P.H.S., announced on March 1 that there seemed no indication that the United States should expect any unusual number of influenza cases as a consequence of the recent outbreaks in Britain and in Japan.

Although influenza is not one of the diseases that must be reported to the P.H.S., he pointed out that over half of the state health departments at this time last year had indicated that flu was prevalent in their areas, but none has done so thus far this year. Another indication that there is no unusual amount of influenza here this year is found in the mortality data which 108 cities routinely report to the Communicable Disease Center each week. Last year, the total flu and pneumonia deaths reported by these 108 cities ranged between 600 and 1,000 deaths a week in January and early February. This year about 500 such deaths have been reported each week. This is well within the limit of what would normally be expected at this time of year.

Asian influenza was the type prevalent here last year, and is the type causing the epidemic in Great Britain, Dr. Terry said. Exposure to cases last year should give most Americans immunity to Asian flu for the next two or three years. The epidemic in Japan, however, is believed to be caused by the B-type influenza virus, which has not been prevalent in this country for about six years. This makes the Japanese epidemic more of a threat than the Great Britain epidemic, although there is presently no cause for alarm. Some Americans are protected against both types of flu because they have been vaccinated with multivalent vaccine, which provides protection against Asian, B and two other types of influenza.

Last fall, Dr. Terry pointed out, the U.S.P.H.S. instituted a campaign to get private physicians and public health officers to see to it that flu vaccine was given to persons with certain types of diseases (such as cardiac disorders, broncho-pulmonary diseases, diabetes and Addison's disease); to pregnant women; and to all persons over 65 years of age. In the past, most influenza deaths have occurred among these three groups. "If the people in these three groups have been vaccinated so that they do not get the disease," Dr. Terry said, "there will be little danger of influenza fatalities, even if an epidemic should occur."

Vaccination after an epidemic strikes has little effect, according to Dr. Terry, because everyone is exposed to the disease almost simultaneously. He urged that those in the three groups for whom the disease is sometimes fatal should get vaccinated now, if they did not do so last fall.

Iowa Association of Medical Assistants

1960-1961 OFFICERS

The Iowa Association of Medical Assistants takes great pride and pleasure in its first appearance as a contributor to the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

We pledge to render honest, loyal, and ever more efficient service to the medical profession and to the public which it serves; to strive at all times to cooperate with the medical profession in improving public relations; to render educational service for the self-betterment of our members; and to declare once again that we are not and never shall become a trade union or a collective-bargaining agency.

President: Miss Helen G. Hughes
c/o P. A. McLaughlin, M.D.
414 10th Ave.
Coralville

Past-President: Mrs. Edris Clawson
c/o John D. Dixon, M.D.
802 Brick & Tile Building
Mason City

President-Elect: Miss Waneta Christensen
c/o Drs. Wicklund, Blanchard & Lanich
1022 W. Fifth Street
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c/o Drs. Orton & Fenlon
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Des Moines

Historian: Mrs. Grace Brock
c/o Drs. Nicoll & Petersen
Panora

Corresponding Secretary: Mrs. Geraldine M. Smith
c/o Drs. Paulus, Goddard & Bozek
227 N. Dubuque Street
Iowa City

We extend a very cordial invitation to those attending the Annual Meeting of the Iowa State Medical Society to stop at our booth in the scientific exhibit section. Bulletins from the component chapters and educational materials will be on display, and we should like you to meet the women representing our organization who will be there to answer your questions.

1961 STATE CONVENTION OF THE IOWA ASSOCIATION OF MEDICAL ASSISTANTS

Blackhawk Hotel—Davenport
May 5, 6, 7

Friday, May 5

5:00 p.m.-9:00 p.m. Registration—Skyline Room
9:00 p.m. Executive Committee Meeting—Presidential Suite
(Davenport stores are open until 8:30 Friday night. Hospitality Room will be open Friday evening.)

Saturday, May 6

7:30 a.m. Registration
Dutch Treat Breakfast—House of Delegates
9:00 a.m.-10:00 a.m. Hospitality Room
10:00 a.m. Invocation: Monsignor M. J. Dingman, chaplain, Mercy Hospital, Davenport
10:30 a.m. "The Role of the Community Pharmacist in the Poison Center"—Bob Gibbs, executive secretary, Iowa Pharmaceutical Association, Des Moines
11:15 a.m. "New Drug Nomenclature and Identification Code System"—Joseph Jerome, Ph.D., AMA, Chicago
12:15 p.m. Luncheon
1:00 p.m. Address—John Flagler, Ph.D., S.U.I. Bureau of Labor & Management
2:00 p.m. "Drug Investigation"—John Lewis, Ph.D., assistant secretary of the AMA Council on Drugs
2:45 p.m. Address—Mr. Millard Mills, general manager, Professional Management Midwest, Waterloo
3:30 p.m.-3:45 p.m. Round Table Discussion by Chapter Presidents
6:00 p.m. Cocktail Hour—Courtesy of the Scott County Medical Society
7:00 p.m. Banquet
Master of Ceremonies: Dr. James F. Bishop
Speaker: Dr. Werner M. Hollander, psychiatrist
(Balance of Saturday evening free.)

Sunday, May 7

8:30 a.m.-10:00 a.m. Hospitality Room Open
House of Delegates
Election of Officers
Installation of Officers
11:30 a.m. Luncheon
"Experiences in an Internment Camp Under the Japanese"—Dr. Myrtle Hinkhouse

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Realizing—that there won't be many more opportunities to write letters for this column. It might be a good idea to develop one theme really well.

Remembering—swatches of poetry:
"The world is too much with us; late and soon,
Getting and spending, we lay waste our powers."

Questioning—Do our children have to memorize poetry in school?

Wishing—we could learn the lessons of history. A scholar 200 years ago wrote: "A democracy cannot exist as a permanent form of government. It can only exist until the voters discover they can vote themselves largess out of the public treasury, with the result that the democracy always collapses over a loose fiscal policy. . . ." Either he was wrong, or we are in trouble!

Reviewing—a new book by John W. Gardner called EXCELLENCE. It must be excellent!

Planning—CONVENTION! Which leaves me . . .

Wondering—how to get a perfect balance of business and fun . . . whether fashions, interior decorating, learning, or sheer entertainment will have the greatest appeal during our purely fun sessions.

Hoping—the building that was done in Auxiliary this year was as sound and effective as that of previous years. . . .

Knowing—the good foundation started by the Auxiliary's early leaders. . . .

Using—the five hardest words in the English language:
I don't know.
I apologize.

LILLIAN P. NIELSEN (MRS. R. F.)
President

SPRING FROLIC

Tuesday, April 25, 9:00-12:00

Grand Ballroom—Hotel Savery
Benefit
Woman's Auxiliary Health Educational Loan Fund

Evan Morgan's Orchestra

Standard Medical & Surgical Company will sponsor the social hour from 8:30

YOUR CONCERN

Two interests are said to have been foremost among man's goals throughout recorded history—one of them is the desire to change lead into gold, and the other is the wish to find the elixir of youth. If we could achieve those objectives, we might then be ready to find a solution for the problems of the aging. In the meantime, it is becoming increasingly difficult to change *anything* into gold (and more difficult still to keep the gold, when once we have produced it), and more and more people are getting older and older.

With the advent of compulsory retirement, extended life-expectancy, inflation and political pressures, the group we have come to know as "our senior citizens" has moved rapidly into the national spotlight. Although the problems of the elderly have been recognized as numerous and diverse, the ones involving their health care have become the principal issue.

Last fall, when the 86th Congress passed the Kerr-Mills Bill, it was felt that the problems of health care for the aged had been successfully solved. Unfortunately, without benefit of trial, the Kerr-Mills system does not satisfy the more liberal members of the new Administration. Pressured by campaign pledges to enact Kennedy proposals in the field of public welfare, they are giving top priority to the passage of a Social Security plan for the medical care of the aged.

Recently, in a special message to Congress, President Kennedy proposed a sweeping new health plan covering care for the aged as well as additional measures affecting other areas of medicine. He insisted that these projects could not be considered as socialized medicine. Yet WEBSTER'S NEW WORLD DICTIONARY defines *socialize* as follows: "to adopt or make to conform to the common needs of a social group." It defines *socialized medicine* as: "complete medical care made available through public funds for all the people of a group, district or nation."

It has long been recognized that medicine is the keystone of socialization, and that once it has been established, the related pieces will fall rapidly into place. Once a program such as the one proposed in the President's message to Congress is passed, it would be but a simple step to enact federal medical care to cover every man, woman and child in the United States.

Socialism can come to a country in many ways.

In the Union of Soviet Socialist Republics, it was the result of a revolution. In Great Britain it was achieved by the application of the Fabian method, i.e., socialism as the result of a series of reforms.

The late Senator Taft often warned us of another road to socialism. He told us: "You can socialize just as well by a steady increase in the burden of taxation beyond the 30 per cent we already have reached, as you can by government seizure. The very imposition of heavy taxes is a limit on a man's freedom." Today, the average worker in the $4,500-a-year bracket loses 32 per cent of his earnings in visible and invisible taxes imposed by government. Additional taxes are already scheduled, and these plus taxes which would be necessary to support the current proposals not only for health care but for additional unemployment compensation, federal aid to education, federal low-cost housing, etc., would leave the American worker very little of his earnings to spend for his individual wants. Thus, his bondage to government is steadily increasing.

America was born on bondage, and achieved freedom only through the efforts of men of vision and integrity. Our freedom was thought worth fighting for, and our new country was founded on the precept of individual freedom. Under the free-enterprise system, America grew and prospered, and it became the acknowledged leader of the free world. Only by continuing to protect our precious rights can Americans maintain their preeminence. Any other path will lead us back to bondage.

Members of the Woman's Auxiliary to the American Medical Association have been asked to participate actively and effectively in a program designed to defeat this new threat to individual freedom. Your Legislative Committee has already sent to county legislative chairmen some plans for getting this program into operation in their areas. In addition, they have written to individual members, explaining the necessity for the program and urging the member to give it her full cooperation. We feel proud that Auxiliary members have been asked to spearhead this fight for individual freedom. It is sure to benefit every citizen to learn the facts about this issue, and it is the duty of every Auxiliary member to help make those facts known. We are not engaged in this battle alone, nor can it any longer be regarded solely as medicine's problem. Thoughtful people from all walks of life can be persuaded to join us.

For those who, through apathy or selfishness, feel that active participation in the affairs of government is not their concern, we leave this thought:

No great civilization has ever been conquered from without until it has been conquered from within. The essential causes of a civilization's decline lie in its people, its morals, its class struggles, its failing trade, its bureaucratic despotism, its stiffening taxes and its consuming preoccupation with war and the machines of war.

JANET ELLIS (MRS. H. G.), *Chairman,*
Legislative Committee
JANE KING (MRS. D. H.), *Co-chairman*

DUES

It is that time of year again! Auxiliary dues from organized counties and members-at-large are due now. Don't wait for the dead-line. Continue your support by helping provide a unified front.

COUNTY AUXILIARIES

Cerro Gordo

The Woman's Auxiliary to the Cerro Gordo County Medical Society was organized in February at which time temporary officers were named. Their first regular meeting will be held March 14 at which time permanent officers for the year will be elected. It is their plan to meet on the same evening the Cerro Gordo Medical Society meets.

Grundy

The Grundy County Medical Auxiliary entertained the members of the County Future Nurses Clubs and their mothers on Wednesday evening, February 15. Mrs. J. R. Jaquis, the Auxiliary president, presided. Miss Ellingrod, the director of nurses at the County Hospital, had prepared a most interesting program. Miss Isabelle Stevens, the assistant director of the School of Nursing, Miss Charlotte Buisch, clinical instructor, and Miss Linda Viering, a freshman student nurse, all from the Evangelical Hospital, Marshalltown, talked informally and answered questions. Mrs. J. E. Rose had charge of the coffee table, Mrs. H. V. Kahler poured, and Mrs. H. L. Mol served the punch. Forty-two were present.

Worth

At a meeting in Mason City on February 12, the Woman's Auxiliary to the Worth County Medical Society reelected Mrs. C. T. Bergen, of Northwood, as its president; Mrs. B. H. Osten, Northwood, vice-president; Mrs. M. P. Allison, Northwood, secretary; Mrs. S. S. Westly, Manly, historian; and Mrs. R. L. Olson, Northwood, legislative chairman.

GUEST SPEAKERS AT THE CONVENTION

Two more of the guest speakers who are to instruct and entertain you at the Annual Convention of the Auxiliary, in Des Moines on April 24 and 25, are pictured herewith.

Mr. Glenn S. Lull, who is to speak at 2:00, on Monday afternoon, on the topic "Personality in the Home," is a Des Moines interior decorator, and currently is president of the Nebraska-Iowa Chapter of American Interior Decorators.

Mr. Paul Engle, of Iowa City, who will speak on the topic "Women in American History" at 2:00 on Tuesday afternoon, is one of the most generally admired contemporary American poets. He is a member of the faculty in English at the State University of Iowa, and is the director of the S.U.I. program in creative writing.

Mr. Engle provided considerably more information about himself than did Mr. Lull, and at the risk of seeming to play favorites, we want to share it with you. The humor that he has put into his autobiographical sketch will give you a foretaste of the amusement you will get from his address.

"Paul Engle—born 1908, Cedar Rapids, Iowa. Father and mother from farming families. Both grandfathers veterans of Civil War. Father's business horses—race horses, then carriage and work horses; grew up with saddle horses, which father bought, sold, trained and rented. Schools in Cedar Rapids, working as newsboy selling papers on street, as carrier boy, drug store clerk for many years, chauffeur, gardener, helping father in livery stable. Began writing poetry in high school; have never stopped. Class poet, Washington High School, Cedar Rapids; read class poem, which was then buried in a bottle under new-planted class tree in schoolyard. Tree died.

"B.A., Coe College, Cedar Rapids, 1931, emphasizing English literature, American history, languages. Had intended studying for ministry (Methodist), preached at Stumptown church on edge of town. Heard no call. M.A., University of Iowa, 1932, presenting for thesis original book of poems, WORN EARTH, which won the Yale Series of Younger Poets prize that year (it may have been the first book of poems to be submitted for a graduate degree in this country, or any other). Year of study toward Ph.D. at Columbia University, English and anthropology. Rhodes scholar, 1933-1936 at Merton College, Oxford University, taking two more degrees. At Oxford, played wicket-keeper on the College cricket team, rowed in College eights; last year rowed in College First Eight, winning an oar as the crew had a successful season, and going on to row in the International Regattas at Marlowe and Henley on the Thames. Traveled extensively around England and on Continent, from London to Kharkov, from Stockholm to Sicily. In 1937, joined faculty of University of Iowa. Married, two daughters—Mary, a student at Radcliffe College, and Sara, at University High School, Iowa City."

Mr. Glenn S. Lull

Mr. Paul Engle

IOWA NURSING CAREERS COMMITTEE

The Iowa Nursing Careers Committee met at the State Office Building, Des Moines, on February 10. This group, as you know, is made up of representatives from several organizations in the state that are interested in helping in the recruitment of nursing students for Iowa. A sub-committee has been appointed to prepare an up-to-date list of loans, grants and scholarships available to students interested in this profession. Anyone knowing of assistance available to students entering this field, please send the information to the Iowa Nursing Careers Committee office, at 529—36th Street, Des Moines.

The sub-committee to study revision of the Rules of Procedure which was appointed in the fall had had meetings, and presented some recommendations which were discussed. The sub-committee will meet again in the near future to continue its study preparatory to a final presentation to the Committee at its annual meeting in May.

ANY ARTISTS FOR AMEF?

Auxiliary members are invited to submit designs for AMEF note paper. All designs should be planned for one color. Entries will be exhibited and judged at the Annual Meeting April 24-25. Several entries will make the competition more interesting.

ART EXHIBIT

at the

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(Scientific Exhibit Section)

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MEETING YOUR MEMBERS

Candidate No. 9

Mrs. G. J. McMillan
Fort Madison (Lee County)

Auxiliary members have come to Iowa from all over the United States. This member of the family is from New York! She came to Lee County and helped to bring that organization into existence. You know she is a real asset to her community and her family. Her special interests are nursing and Mental Health.

She came to us from old New York.
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Her interest is in Mental Health,
We know her help adds to our wealth.

We asked for bits that we should know,
We sleuthed for something high and low.
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Her family is complete with two.
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To my grandchildren:

I hope you like all the presents we are buying for you:

1. World friendship
2. World peace
3. Social Security benefits
4. Veterans hospitals
5. Farm surpluses
6. More and more free care

At the bottom of these presents, we are leaving you a bill. We have gone without lots of things trying to pay the bill, but we could not make the grade.

It's too late, but now that we've bought all these things we're leaving you, I have the uneasy feeling we didn't select very wisely.

Maybe we should have left you fewer "presents," but without the hidden bill.

. . . *from an American Citizen*

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

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THE Journal OF THE IOWA STATE MEDICAL SOCIETY

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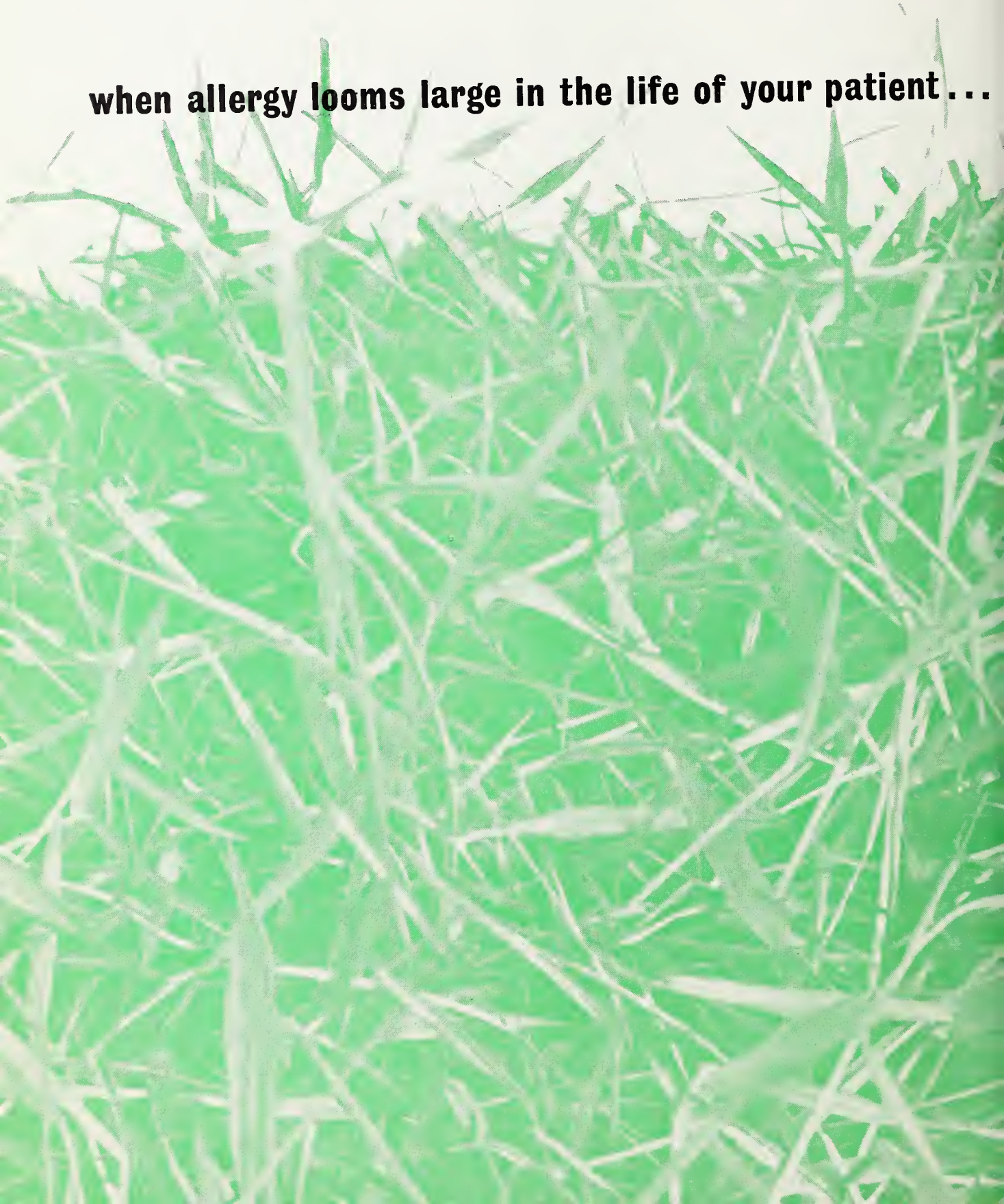

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Vol. LI MAY, 1961 No. 5

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Calling Dr. X!—To Help Reduce Swelling In the Costs of Health Insurance

W. L. HOGUE, JR., M.D.
AKRON, OHIO

I AM GOING TO BRING a patient before you in a figurative way. The patient is industrial health insurance. I propose to describe his history, his condition and his symptoms, and perhaps I'll even diagnose. I hope that we can then agree on a prognosis and prepare to write a prescription to alleviate the most obvious of his symptoms, that of swelling of the costs.

The patient, industrial health insurance, is young, and perhaps his exceedingly rapid growth has been a cause contributing to his symptoms. One of the most phenomenal developments in the field of industrial relations during the past decade or so has been the rapid growth of negotiated health and welfare programs. The year 1942 does not seem a very remote past to many of us, and yet in that year there were very few references to health insurance plans, according to a survey of contracts that has been made by the Bureau of Labor Statistics.

At the end of World War II, negotiated health programs became one of the chief goals of labor leaders throughout the United States, and by 1955 labor agreements *without* health insurance clauses had actually become a rarity. In fact by the end of 1954, as many as 98 per cent of the 11,290,000 workers included in collective bargaining units were covered for wage losses resulting from sickness or accident, as well as for medical care and death benefits.

The sums of money allocated to supplements of direct wages have been growing rapidly, both in total amount and in percentage of total wages. In a typical recent year, American employers paid their employees wage supplements averaging 17 per cent of the direct payments in wages and salaries. Here is an indication of the expansion that has taken place. The supplements had represented only 3 per cent of total wages in 1929, and about 6 per cent in 1938. Here we are talking about *all* supplements, but about one-fifth (20 per cent) of this total is for health insurance benefits alone. We are in the realm of big finance, you see. The medical industry—if we may call it an industry—is an impressive portion of the total economy. The Department of Health, Education and Welfare estimates that private expenditures for medical care amount to over $15 billion annually. This represents as much as two-thirds of the value of all residential construction in a given year.

VOLUNTARY HEALTH INSURANCE MUST BE PRESERVED

Health and welfare plans present a unique area of labor-management relationship. In no other field do employees and unions have such an outstanding common interest. Once they have established the extent and range of the benefits, the dividing line between them dissolves. They are then united in a single, common effort to obtain the best quantity and quality of benefits.

It is pretty much the consensus of opinion that the best hope for the future in medical care lies in continued experimentation with, and in further expansion of, prepaid forms of group insurance. The voluntary health insurance movement, with its rapid growth, is the best example of the ability of welfare capitalism to forestall the movement toward the welfare state. Important and involved groups in the economy are committed to making our health insurance program work well enough so that a comprehensive state system will be unnecessary.

It is in the fields of costs and responsibility that the difficulty lies. A little story illustrates this point very well:

An immaculately dressed but obviously distressed patient had just been seated in a psychiatrist's consulting room. "First," he said, "a word about my present status in life. I live with my family on a 40-acre estate. There are a tennis court, two swimming pools, a private golf course and a five-car garage. I also have a town house, a yacht and a helicopter. My son is at Groton, and my daughter attends an exclusive finishing school in the East. My wife is beautiful, she adores me, and yearly she is named one of the 10 best-dressed women in America."

"That all sounds like a perfect existence to me," interrupted the doctor. "Tell me why you think you need my services."

"I've got to know how to keep going without lowering my standards," answered the patient. "You see, my salary is only $50 per week."

This is our predicament as regards group industrial health and welfare insurance. We want and need to keep the rewards—in other words to keep up our standard of living, like our friend in

---

Dr. Hogue is medical director of the Firestone Tire & Rubber Company, and he made this presentation at a meeting of the Polk County Medical Society, held at the Des Moines Firestone Plant on November 16, 1960.

the psychiatrist's office. We need even to increase it. Yet we don't know how to do it despite limited income and increasing costs.

I am reminded of another story about a psychiatrist's patient. He said he didn't mind the billed cost of analysis, but declared that his real concern was for all of the loose change that slipped from his pockets when he lay down on the couch. The cost of insurance of various sorts, of paid holidays and of other extras—the loose change, so to speak—may be referred to as "fringe benefits," but when the "fringe" amounts to almost 20 per cent of the total wage, it is a pretty deep fringe. The welfare benefits have thus become an essential part of the wage agreement.

THE FIRM, THE EMPLOYEES AND MEDICAL GROUPS SHARE RESPONSIBILITY

Truly, it is the loose change that we need to watch. This brings me to the element of responsibility. The widespread introduction of health insurance coverage has changed the distribution of the financial burden of medical care costs, and has almost certainly increased the total amount of money available for the purchase of medical services. Organizations have replaced individuals as the purchasers. For health benefits, an earmarked sum of money is made available through the prepayment mechanism of industrial insurance, and this sum goes to an easily identifiable group of suppliers in return for a narrow range of services.

In placing responsibility for obtaining maximum service for a minimum amount of money, we find that only a few groups are involved—the employees, the employer, the hospitals and the doctors. True, the company administers the funds for hospital and medical care, and the union is notified as to the costs. Now, who is responsible for seeing to it that the insured employee gets the maximum coverage? The employee has some responsibility, and he is more than willing to accept it—insofar as to make sure that he is fully protected. But he is less concerned about how much the protection costs. The company has a double responsibility—to itself and to the employee. The medical groups have a responsibility. All three have a definite and positive obligation to the community and to the economy to make sure that increased costs, if any, are real and not inflationary. Increases in costs and unneeded utilization of funds just because the money is available will be reflected in cost rises in other plans, and then the round-by-round inflationary spiral is in full swing.

Hospital care, for example, is a very complex thing. It is a collection of many kinds of services and skills. Any increase in costs or pyramiding of services on any one level is reflected on all other levels, and the add-on spiral of costs is constructed.

It is difficult to provide statistics and comparative costs between industries, or even between two successive years in the same industry, because of overall price and wage-level fluctuations, and because of the different degrees of coverage in different plans. But there can be no doubt that costs have risen and are continuing to rise. It is just as certain that all of us must apply ourselves to the task of reversing that trend.

BASIC CAUSES FOR INCREASES IN HEALTH INSURANCE COSTS

First, the extent of coverage has been rising with great speed. In the beginning, our job was administering first aid and controlling health hazards, but the program has grown to a comprehensive approach to the total health needs of the employed population *and their dependents.* This expansion of coverage has resulted from a growing recognition by management, labor and the health professions of the great opportunities that the extension of all industrial health work offers for the prevention and early detection of illness, for the improvement of efficiency and productivity, and for the reduction of losses caused by absenteeism for medical reasons.

The basic causes of continual rises in premium costs are:

1. Increased coverage and added benefits
2. Higher costs of hospital management, hospital services and hospital supplies
3. Increased utilization of hospital facilities
4. The introduction of new and expensive drugs.

Health insurance benefits are up 8 per cent in 1960, as compared with 1959. Patients collected $8.6 million a day from insurance companies in the first half of 1960. During the comparable half of 1959, the sum was less than $8 million per day.

Some interesting figures come from the Economic Research Department of the United States Chamber of Commerce: In the 102 companies studied, fringe payments of all kinds rose from 15 per cent of payroll in 1947, to 23.7 per cent of payroll in 1957, or from $420 per year per employee in 1947, to $1,150 per year per employee in 1957. It is difficult to separate the health insurance portion from the other charges that make up these

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fringe costs, but there is strong evidence that it has been steadily in the ascendancy. The rise has been at least one per cent per year in terms of payroll, and in the period 1945-1957, the employees' payments for pensions and health benefits doubled.

At Firestone, the cost per man-hour worked, for hospitalization, medical and surgical benefits, has practically doubled *since* 1956. The cost of sickness and accident benefits per man-hour worked has increased by approximately 40 per cent in the same period.

HAS HEALTH INSURANCE INFLATED MEDICAL CARE COSTS?

Although industry is concerned about medical fees and hospital rates in general, it is more concerned with the special problems of the abuse of specific provisions of certain insurance plans.

If the health and welfare plans have tended to increase the costs of hospital and medical care, then the total effect on the economy has not been good, and the alleged benefits are minimized. The serious questions become: "Are the prices of medical care inflated?" and "What is the evidence that the growth of health insurance has caused this inflation?"

The starting point for an analysis is the Consumer Price Index (CPI) of the Bureau of Labor Statistics. The Medical Care Index and the CPI rose by about the same overall percentage between 1935 and 1958, but the timings were quite different. The Medical Care Index lagged behind the CPI between 1935 and 1946, then increased at approximately the same rate until 1949, and then rose at a substantially faster rate up through 1958.

On the average, the cost of hospital care for specific incidents of illness has been held down by the trend toward shorter periods of hospitalization. Unfortunately, however, the rate of utilization of hospital services has been increasing. In addition, another factor tending toward higher costs has been present—the increasing importance of medical services performed in the hospital. Thus, it can be seen that total hospital bills are influenced by four major factors: (1) rising daily rates, (2) falling length of average hospital stay, (3) rising rate of utilization, and (4) rising costs of hospital extras.

It has been pointed out that of these four, only the first is completely under the control of the hospital. The rate of admissions and the average length of stay are the result of decisions by physicians. The hospitals and the doctors share responsibility for the number and cost of the extra services performed.

It can be stated rather confidently that at least some of these factors have been influenced by the existence of health insurance, with the result that costs have been inflated. When costs in our own sector of the economy have begun rising more rapidly than the CPI, we must take a close look at our procedures.

ABUSES IN HEALTH INSURANCE PROGRAMS

The abuses in prepaid health insurance programs have these common denominators:

1. The performance of medical procedures or the rendering of medical services which would not ordinarily have been performed or rendered if the patient had not been insured. Abuses of this kind include, among other things, the performance of unnecessary surgery and diagnostic procedures which are more elaborate than customary, or which repeat tests previously performed. The prevalence of this kind of abuse may increase both the costs of hospitalization and the costs of medical and surgical benefits.

2. Excessive visits for doctor's care in the office, home or hospital, or unnecessarily prolonged hospital stays.

3. Unnecessary hospitalization ordered for the performance of a medically-necessary service that could have been performed on an outpatient basis.

4. The charging of fees higher than those that would have been charged for the same service to an uninsured patient in similar circumstances.

The use of such words as *unnecessary, more elaborate than customary,* and *excessive,* in the foregoing tabulation emphasizes the subjective nature of much of the abuse problem. The boundary line between abuse and good medicine is often vague and subject to differences of opinion. Also, it should be noted that the insured employee must share some of the blame, for he influences the physician's decisions to a considerable extent, and it is to him that the physician is primarily responsible.

Society, it seems, must choose a certain balance between the utilization of health services and their costs.

It must be remembered at all times that the cost of health insurance, when paid by industry, is a part of the cost of doing business and therefore affects the cost per unit of production or cost per man-hour of labor. It also must be remembered that it is not only the purpose but the duty of business to operate successfully and at a profit. When an employee is off the job for any reason, he is non-productive and the overall average of his productivity goes down. If his absence is necessary for his health and well-being, it is accepted as a natural part of production costs. But if his absences are over and above that necessity, they contribute to an inflationary trend.

For emphasis, let's go back to the excessive length of hospital stay and look at some evidence. A study by F. Curtis Dohan and associates, which appeared in the periodical SURGERY, GYNECOLOGY & OBSTETRICS,* tells us:

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* Dohan, F. C., Taylor, E. W., Jr., and Moss, N. H.: Role of surgeon in prolongation of uncomplicated surgical convalescence. SURG., GYNEC. & OBST., **111**:49-57, (July) 1960.

1. The majority of individuals are advised to undergo far longer convalescence after common surgical procedures than is necessary and, as a result of this advice, do so. This results in considerable inconvenience and economic loss to the individual and the nation.

2. The surgeon's recommendation is the major determinant of the total duration of uncomplicated convalescence in most patients.

3. Most otherwise healthy patients do not need the prolonged period of postoperative convalescence usually recommended.

Firestone is extremely interested in its employees. The Company needs every man as a loyal, active member of a team. For the good of the whole group, and for the good of the individual, each employee must be kept active as long and as regularly as possible.

Industrial health service is fundamentally preventive medicine. With this fact in mind, we request all of our medical examiners to be extremely thorough in screening all new applicants for work. They should determine as nearly as possible (1) whether the individual is in good physical condition and able to perform the duties for which he is being employed, and (2) whether, from his past history and all other ascertainable facts he will, in all probability, remain in good health.

If the pre-employment examination decreases the Company's general vulnerability to lost time, and if its medical and hospitalization program is realistic and controlled, it can make its maximum contribution to the welfare and happiness of the individual and can fulfill its obligation to the nation's economic and social welfare.

A long time ago John Donne said, "No man is an island. . . ." What happens to one man has an effect on every other man, in varying degrees. No decision can be made on the basis of one person. The decision must be consistent with all other groups and forces of which he is a part.

Minnesota Annual Meeting May 22-24

The 108th Annual Meeting of the Minnesota State Medical Association will be held May 22-24, at the St. Paul Municipal Auditorium. Program highlights for Monday, May 22, include papers by Nathan J. Smith, M.D., Madison; C. Allen Good, M.D., Rochester; and Charles Heidelberger, Ph.D., Madison. Other lectures and discussions scheduled for Monday will have the following participants: O. H. Wangensteen, M.D., C. J. Watson, M.D., John A. Anderson, M.D., and John L. McKelvey, all of the University of Minnesota, and Robert S. Flom, M.D., of St. Paul.

On Tuesday, May 23, the program will open with a review of the major categories of edema. The participants will include J. C. Broadbent, Rochester, moderator; Cyrus C. Brown, Jr., M.D., Duluth; Jaime Paris, M.D., Rochester; J. A. Spittel, Jr., Rochester; and C. Paul Winchell, M.D., Minneapolis. The other speakers on Tuesday's program include R. G. Siekert, M.D., Rochester; Sidney A. Fox, M.D., New York City; H. A. Andersen, M.D., Rochester; J. J. Swendson, M.D., St. Paul; and Albert B. Hagedorn, M.D., Rochester.

On Wednesday, May 24, the business side of medicine will be highlighted. Speakers on this program will be Mr. William D. Huntington, the Minnesota manager, and Mr. Millard K. Mills, the general manager of Professional Management Midwest, Waterloo. There will also be an address by Hon. Elmer L. Andersen, governor of Minnesota, and the closing event will be a discussion entitled "Doctors and Lawmakers," in which Ernest B. Howard, M.D., assistant executive vice-president of the A.M.A., will take part.

Scientific roundtable luncheons on Monday will deal with the following topics: "One Dozen Eye Problems Which Vex the Family Doctor," "Use of Tranquilizers," "Athletic Injuries," and "Obstetric Emergencies." The Tuesday roundtables will concern "Non-Penetrating Wounds of the Abdomen," "Problems in the Management of Status Asthmaticus," "What to Do About Goiter," and "Cesarean Section."

For additional details, write to the Committee on Scientific Assembly, Minnesota State Medical Association, 496 Lowry Medical Arts Building, St. Paul 2.

Scientific Articles

Problems of Modern Antibiotic Therapy

COL. EDWIN J. PULASKI, MC, USA
WASHINGTON, D. C.

THE THERAPEUTIC USE of antibiotics is indispensable in the management of patients with certain established bacterial diseases. The patterns of therapeutic management and expected response are well established. Effective prevention of impending infection is less well delineated, since the indications for and the results of prophylactic antibiotic therapy are often not clearly defined.

The antibiotics have in recent years come under fire on account of the continued emergence of some drug-resistant bacterial species, sensitization, toxic and other reactions of patients to some antibiotics, and varied responses of the same type of infection in different patients who have been given identical treatment.

CLASSIFICATION OF ANTIBIOTICS

There have been no important additions during the past 10 years to the list of infectious diseases that have been conquered by antibiotics. One reason for that fact is that, in spite of the continuing introduction of new antibiotics, we have only a small number of independent drugs of this kind in general use. The list of different antibiotic preparations now available contains about 28 separate agents, but it seems longer than it actually is because the same antibiotic has been given a variety of trade names (e.g., "Ilosone" and "Erythrocin" for erythromycin, and "Achromycin," "Tetrex," "Aureomycin," "Cosa-tetracin," "Panmycin," etc. for tetracycline); because of a redundancy in the marketing of several closely related antibiotics (e.g., oleandomycin and erythromycin; neomycin, kanamycin and paramomycin); and because each one of them, or combinations of two or more of them, can be bought in almost innumerable dosage forms that run the gamut from injectables to capsules, tablets, ointments, powders, suppositories, bougies, etc.

Antibiotics are best classified in terms of the spectrums of organisms that they attack:

1. Activity on gram-positive organisms (principally against Staphylococci, Streptococci, Pneumococci, Clostridia, Actinomyces bovis and T. pallidum):

the penicillins	vancomycin
the erythromycins (including oleandomycin)	ristocetin
novobiocin	bacitracin
	tyrothricin

2. Useful activity against many gram-positive as well as gram-negative bacteria—the broad-spectrum antibiotics:

- the tetracyclines (including chlortetracycline, oxytetracycline and tetracycline)
- the chloramphenicols
- streptomycin
- the neomycins (including kanamycin)

3. Usefulness against special organisms or special groups of organisms:

- the polymyxins (including colistin) against Ps. pyocyanea and other gram-negative bacilli except the Proteus species
- streptomycin, cycloserine and viomycin (also isoniazid and p-aminosalicylic acid) against tubercle bacilli
- nystatin, amphotericin B and griseofulvin against certain pathogenic fungi

Col. Pulaski is deputy director of the Walter Reed Army Institute of Research, and he made this presentation in Iowa City on December 7, 1960, at the annual meeting of the Johnson County Medical Society.

It is also useful to classify them according to the type of effect they have upon the organisms that they attack:

1. Primarily bactericidal

penicillin	vancomycin
streptomycin	the polymyxins
the neomycins	

2. Principally bacteriostatic

the erythromycins	the "broad-spectrum" antibiotics
novobiocin	

Antibiotics vary considerably in their patterns of bacterial sensitivity for the same bacterial species, and in their tendency to elicit the emergence of drug-resistant strains. These properties are measured in the laboratory by some form of *in vitro* antibiotic sensitivity test, the agar plate-medicated disk method being the most widely used. Figure 1 summarizes the essential points about sensitivity and resistance of the common wound pathogens to the most important antibiotics. The problem of antibiotic-resistant strains is particularly acute in hospitals because the commonest wound pathogens, especially Staphylococcus aureus and the gram-negative bacilli, are also the ones most likely to give rise to resistant variants. These show a tendency to spread into the communities where the particular antibiotics are widely used.

A number of organisms are shown to be almost invariably resistant to certain antibiotics (depicted in Figure 1 as blank spaces). For example, the Clostridia and the Streptococci are resistant to the neomycins, polymyxins and streptomycins. The hatched areas, which appear in many places in Figure 1, indicate that both sensitive and resistant strains are encountered in patients. The resistant strains include both those which emerge after contact with the antibiotics and those the occurrence of which apparently is unconnected with the use of the antibiotic ("wild" or naturally-resistant strains). What is also important, though perhaps less well appreciated, is that certain antibiotics are always found to be active against certain organisms. For example, all strains of beta hemolytic Streptococci (group A) and of pathogenic Clostridia are sensitive to penicillin. Virtually all strains of Pseudomonas pyocyanea are sensitive

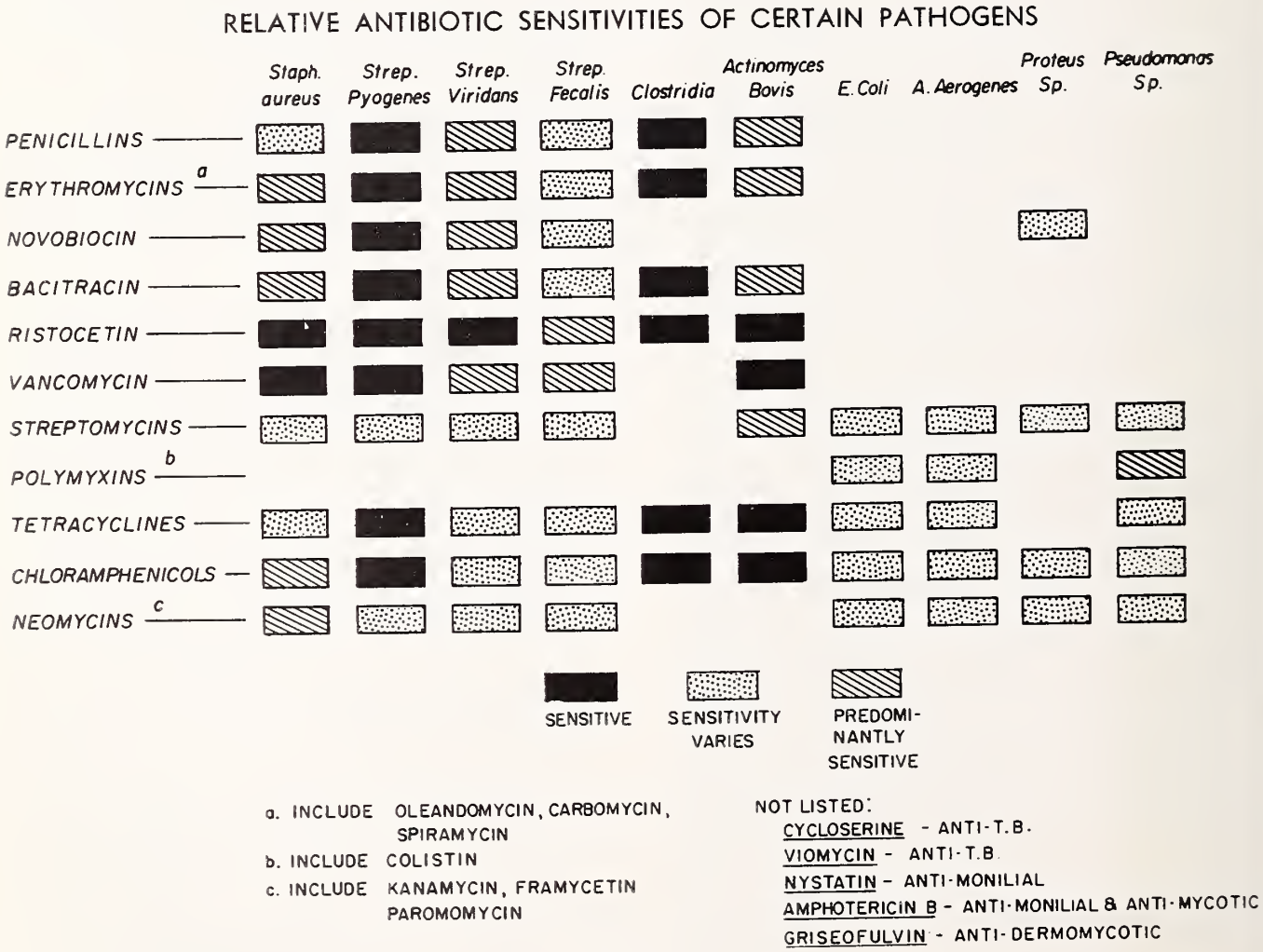

Figure 1

to the polymyxins. And, so far, virtually all strains of Staphylococcus aureus appear to be sensitive to a new biosynthetic penicillin, vancomycin, ristocetin and kanamycin.

If the vertical lines of Figure 1 are followed, it is apparent why the present "problem" organisms are principally the Staphylococci and the gram-negative bacilli. Most "hospital" Staphylococci are often but not always resistant *in vitro* to penicillin, streptomycin and/or the tetracycline group of antibiotics, and are often but not always sensitive to erythromycin, novobiocin and chloramphenicol. In contrast to penicillin, tetracycline and chloramphenicol, to which a sensitive infecting Staphylococcus does not become resistant during the course of treatment (though the sensitive strain in an open infection may be replaced by a resistant strain, especially in a hospital), the erythromycin antibiotics and novobiocin are likely to stimulate a rapid emergence of resistance in the Staphylococci during treatment beyond a course of five days. The new biosynthetic penicillin—dimethoxyphenyl penicillin ("Staphcillin")—joins vancomycin, ristocetin and kanamycin in the list of antibiotics to which Staphylococci are almost invariably sensitive.

Because the penicillin-resistant Staphylococci do produce penicillinase, if there happens to be a mixture of hemolytic Streptococci and penicillinase producers—as in pharyngitis, on a burned surface, or in an infected wound—penicillin therapy is likely to be ineffective against the sensitive organism as well as against the resistant one. In hospitals, tetracycline-resistant strains of hemolytic Streptococci are also emerging and increasing in frequency. Thus, there is a potential hemolytic Streptococcus problem.

Figure 1 calls attention to the fact that the clinical problem of resistance is even more acute among the increasingly important gram-negative bacilli than among the Staphylococci and Streptococci. There is no antibiotic which is uniformly active against all strains of Alcaligenes, Aerogenes, Escherichia coli or Proteus. Virtually all strains of Pseudomonas pyocyanea, however, are sensitive to polymyxin and the closely-related colistin.

There are two approaches to the problem of emergence of resistance: (1) mature judgment and strict economy in prescribing any antibiotic, and (2) prevention of cross-infection with resistant organisms in wards, operating rooms and clinics by means of strict asepsis and hygiene.

PRINCIPLES OF THERAPEUTIC APPLICATION

Whenever antibiotic therapy is prescribed, it should have a real indication and a real aim. The indications are therapeutic or preventive. The aim is collaboration with the natural defense mechanisms of the body. Antibiotics simply attack rapidly-proliferating bacteria; the physician must treat the patient. In order for the clinical application of antibiotics to be precise, and consonant with the task of assisting nature in her attempts at healing, the following accepted principles underlying therapy must be observed.

1. The exact site and nature of the infection must be identified from the history, physical examination and appropriate diagnostic procedures. Frequently, the bacteriologic diagnosis is derived from the clinical. When it is not, or when drug-resistant infection is suspected, bacteriologic studies are needed. While this information is being collected, antibiotic therapy—if indicated—is instituted on the basis of prior experience.

2. A well-performed antibiotigram is a valuable aid in the correct selection of an antibiotic or combination of antibiotics, generally in staphylococcal, enterococcal, gram-negative bacillary, some mixed infections, and suspected secondary or superinfections. It has no value if the media employed do not support the growth of the causal bacteria (e.g., Hemophilus influenzae, tubercle bacilli, Gonococci, diphtheria bacilli, etc.), if the infection is mixed and there is heavy overgrowth with Proteus or other rapidly-growing coliform bacteria, or if anaerobes are the only or are the important infecting bacteria. Also, it has no value if the organisms recovered (e.g., from skin, mucous membranes or urinary tract) represent contaminants rather than true pathogens.

3. The antibiotic chosen should be useful and effective against the infection for which it is prescribed. The general activities of antibiotics have been depicted in Figure 1.

(a) Penicillin is still the most effective agent for combating bacterial infections in which drug-resistance poses no problem, i.e., those due to the hemolytic Streptococci, Pneumococci, Gonococci, Treponema, anthrax bacilli, Actinomyces israeli and the Clostridia of tetanus and gas gangrene. In very high concentrations, it is effective with streptomycin for enterococcal infections, and for mixed infections such as acute secondary peritonitis. Whenever the organism is sensitive to penicillin G, this antibiotic remains first choice for staphylococcal infections of soft tissues, bone, middle ear, meninges, heart, blood stream and lungs.

(b) Staphylococcal resistance or patient idiosyncrasy to penicillin may necessitate the selection of an alternative antibiotic, or a sulfonamide to combat hemolytic Streptococci. The erythromycins and novobiocin are bacteriostatic and are suitable for non-endocardial drug-sensitive staphylococcal infections. Erythromycin is by far the most active of the erythromycin group. "Staphcillin," vancomycin, kanamycin and ristocetin are bactericidal antibiotics, and are indicated for severe, disseminated coccal infections. Bacitracin is reserved principally for topical anti-staphylococcal therapy.

(c) The principal indications for tetracycline therapy in surgical practice are: (1) drug-sensitive infections of the liver parenchyma, biliary tree,

urinary tract or peritoneum; (2) amebic colitis; (3) drug-sensitive pyogenic infections in patients who are allergic to penicillin; and (4) other infections in which the causal organisms are sensitive to tetracycline but are not to other antibiotics.

(d) The principal indications for chloramphenicol therapy are: (1) staphylococcal, gram-negative bacillary or mixed infections resistant to other antibiotics but sensitive to chloramphenicol; (2) typhoid fever; and (3) pyogenic infections of the central nervous system and eyes.

(e) Streptomycin is useful in infections which are due to gram-negative organisms susceptible to its action, in tuberculosis, and (with another antibiotic) when Streptococcus fecalis is the infecting agent.

(f) The polymyxins, including colistin, are suitable for many gram-negative bacterial infections of the urinary tract, blood or bowel, except Proteus, and are the choice for Pseudomonas infections. Topical applications of polymyxin alone, or in combination with a neomycin or bacitracin, are useful for surface infections.

(g) The neomycins, owing to their direct toxicities when administered systemically, are reserved principally for topical applications as powders, sprays or ointments; in preparation of the colon for surgical intervention; and, given orally, in cases of hepatic coma. For severe staphylococcal or susceptible gram-negative infections, the neomycins must be used cautiously or not at all in patients with impaired renal function, because of the risk of ototoxicity. The newly-introduced oral antibiotic paromomycin (Humatin®) is useful by mouth for intraenteric Shigella, Salmonella and enteric amebic infections.

4. The drug chosen and the dosage prescribed should be adequate to reach and combat the infection. To provide adequate antibiotic therapy without undue risk to the patient, the dosage of the chosen antibiotic should be adjusted according to the degree of impairment, if any, of renal excretion. Practically all the antibiotics except penicillin, chloramphenicol and the erythromycins are cleared by glomerular filtration, and average doses may produce high serum levels with direct toxicities in azotemic patients. Adequate, maximally-safe doses, only for as long as needed, reduce the risk of superinfections and reduce the risk of the emergence of drug-resistant strains.

5. The majority of infections can be effectively treated with a single antibiotic. Synergism between pairs of antibiotics is rare. The principal indications for combination antimicrobial therapy are: (1) in the topical therapy of mixed surface infections with poorly absorbed drugs of limited spectrums, such as polymyxin, bacitracin and neomycin; (2) in the anticipated use beyond five to seven days of drugs with potentialities for the rapid emergence of drug-resistant strains, e.g., the erythromycins, novobiocin or streptomycin; (3) in the treatment of severe staphylococcal bacteremia, meningitis or pneumonia; and (4) in the treatment of Proteus, Aerobacter or Pseudomonas infections, when the organisms are only moderately sensitive to a single drug. When drugs are used in combination, full doses of each member of the mixture should be given.

6. There are six conditions which the physician who is treating necrotic and pus-forming infections must keep in mind:

(a) that the infected area must be protected from all manner of injury

(b) that scrupulous care is necessary to prevent new germs from being implanted

(c) that whenever free pus collects in the tissue under tension, an exit must be provided, and that when there is discharge from an infected area, a free exit must be maintained until all necrotic morsels and foreign bodies have been discharged and removed

(d) that whenever a non-metallic foreign body has been imbedded in the infected tissue, healing will not occur until the foreign body has been removed

(e) that when, as a result of infection, collapsible spaces exist and do not disappear when the exudate is evacuated, the body cells seem unable to destroy the bacteria but will do so readily if the rigid wall is removed mechanically so that a yielding, collapsible cavity results

(f) that in certain states of infection, the entire local focus may be removed with advantage.

7. In severe and chronic infections, supportive therapy to bolster host resistance and correct physiologic deficits is a necessary complement to antibiotic therapy. Blood, plasma, albumin and solutions of electrolytes are employed as necessary to correct anemia or blood-volume deficits. Gamma globulin is still in the stage of clinical testing. Vasopressor drugs are given to combat peripheral circulatory collapse. Steroid therapy is reserved for support of patients with bacterial shock, until the lesion can be controlled. Supportive therapy includes concurrent treatment of underlying cardiovascular, metabolic or endocrine disorders.

8. Antibiotic therapy has no place as a diagnostic test of whether or not infection is the basic problem in an obscure clinical syndrome. For example, the institution of antibiotic therapy before, rather than after, the decision has been made to operate for a suspected perforative lesion of the gastrointestinal tract may culminate in delay in diagnosis and treatment—even disaster. Antibiotic therapy, furthermore, has no place in the treatment of inflammations due to other than drug-susceptible microorganisms.

9. The most important limitations and dangers of antibiotic therapy stem from poor selection, lack of clear indications or unwise use of antibiotics; futile chemoprophylaxis; failure to drain inaccessible, deep or thick-walled abscesses or necrotic foci; reinfection; and drug toxicities. The principal hazards of antibiotic therapy are listed in Table 1.

TABLE 1

PRINCIPAL HAZARDS OF SYSTEMIC ANTIBIOTIC THERAPY

PENICILLINS
Skin reactions; contact dermatitis; systemic reactions (anaphylactoid, etc.).

STREPTOMYCINS
Vertigo; deafness; drug fever; cylindruria; skin rashes; eosinophilia.

CHLORAMPHENICOL
Inhibition of bone marrow function (especially in Caucasian girls under 12); "gray syndrome" in prematures and newborns; GI disturbances.

TETRACYCLINES
Superinfection: TET_R Staph. aureus, gram-negative bacilli, C. albicans in GI, respiratory, urinary tracts—diarrhea, enterocolitis, pneumonia, cystitis.
Demethychlortetracyline—photosensitization.

POLYMYXINS
Nephrosis; neurotoxic phenomena; pain—injection site.

NEOMYCINS
Tubular necrosis; deafness; respiratory arrest from overdosage (perit. cav.).

NOVOBIOCIN
Skin rashes; scleral icterus; GI disturbances; Staph. resistance.

ERYTHROMYCINS
Alimentary tract disturbances; Staph. resistance; pain, I.M. injection.

BACITRACIN
Kidney damage; pain in injection site.

RISTOCETIN AND VANCOMYCIN
Elevated B.U.N.; deafness; hematologic disturbances; skin rashes; thrombophlebitis—I.V. injection.

PREVENTIVE USES OF ANTIBIOTICS

Following World War II, as penicillin became cheap and after streptomycin had become available, these agents came into almost universal use for the purpose of circumventing infections anticipated in surgical patients. That faith in and vain hope for chemoprophylaxis have been disappointed, as the growing number of disillusioning reports of carefully-controlled studies in the recent literature have attested (Table 2).

There is now a general agreement among surgeons who have studied the pathogenesis of infections in "clean" operations that routine chemoprophylaxis is unnecessary and even potentially dangerous, that it extends the period of time in which contamination can become infection, and increases the risks of side-effects, drug-resistance, etc., and that it should be abandoned. It should be remembered that bacterial contamination *per se* is insufficient for the development of wound sepsis, and that contamination seldom becomes infection without wound-healing faults, with or without concurrent depressed host defense mechanisms. This recommendation applies as well to non-bacterial preoperative or postoperative complications, in which antibiotic prophylaxis has generally been thought indicated. Most "new" infections in hospitalized patients are due to Staphylococci or any one of various gram-negative bacilli that are commonly, but not universally, resistant to penicillin, streptomycin, the tetracycline antibiotics and the sulfonamides. It is once again apparent that surgical technic and the surgical and nursing staffs are the most important factors in the prevention or establishment of septic complications.

TABLE 2

CURRENT STATUS OF SYSTEMIC CHEMOPROPHYLAXIS

UNNECESSARY

Simple Traumatic Wounds
"Clean" Surgical Procedures:
Inguinal herniorrhaphy; gastrectomy; cholecystectomy; simple appendectomy; prostatectomy; abdominal hysterectomy; minor gynecologic procedures; anorectal surgery.
"Clean" Orthopedic Procedures
Specialized Surgical Procedures:
Craniotomy; pulmonary resection—non-infected lesions; cardiovascular, extracorporeal perfusion operations.
Acute Heart Failure
Atelectasis
Coma
Indwelling Catheters
Retrograde Pyelography
Steroid Therapy
Thrombophlebitis
Tracheostomy

LEGITIMATE

1. Complex musculoskeletal wounds.
2. Thermal injuries.
3. Penetrating body cavitary wounds.
4. Plastic operations, radical surgery for carcinoma of oral cavity.
5. Division of bronchus for infected lesion; tracheo-esophageal, bronchopleural fistula.
6. Colon resection for inflammatory, perforative or neoplastic disease; strangulation obstruction of small bowel; regional enteritis with fistula; transplantation of ureters; closure of colostomy.
7. Bacteriuria of pregnancy.
8. Labor with manual interference?

On the other hand, there still are some *legitimate* uses for anti-infective agents in surgery. The traditional Crede technic for preventing ophthalmia neonatorum is an example. Immunization against tetanus is another. Practical experience has supported the continuing use of anti-infectives in preventing (1) further attacks of rheumatic fever; (2) subacute bacterial endocarditis in patients with valvular heart disease when they must under-

go dental extractions; (3) in patients with acute bronchitis; and (4) for neurological disturbances in hepatic coma. Antibiotic prophylaxis is also probably warranted for the prevention of bacterial invasion in delayed or non-operative treatment of such acute inflammatory lesions as perforated peptic ulcer, acute pancreatitis and acute diverticulitis. Prevention of spread of infection during surgical intervention in active infection, as in tuberculosis, localized pyogenic infection, bronchiectasis, pyuria, etc. is not prophylaxis but a continuation of specific therapy.

Severe, compounded musculoskeletal injury, and penetrating wounds of joint spaces and of body cavities in which the danger of invasive infection already exists because of delay in operative management are justifiable indications for antibiotic prophylaxis (with penicillin or the tetracyclines) in addition to precise surgical and supportive treatment. Patients with skull injuries and either otorrhea or rhinorrhea require protection against meningitis through the administration of adjunct chloramphenicol and/or systemic sulfonamides. In the burned patient, except for the prevention of hemolytic streptococcal infection, systemic antibiotic prophylaxis has been disappointing.

In elective surgery in heavily contaminated fields, the regional bacterial flora should be reduced preoperatively by mechanical cleansing and adjunctive chemotherapy, the choice of drug being tailored to the bacterial flora of the region. Prevention of contamination of the operative field should be achieved through proper quarantine. Postoperatively, antibiotic therapy is seldom necessary unless spillage has occurred.

There has been widespread renewal of interest in the supplemental use of antibiotics locally to treat impending or established peritonitis and impending wound infection. The interest in local therapy as an adjunct to systemic therapy stems from the reports of Burnett[1] (using penicillin and streptomycin), and of Schatten[2] (using neomycin), as well as our own studies.[3] It has been demonstrated that levels of drug higher than those achieved by the intravenous route of administration can be secured in the peritoneal fluid after local instillation of weak solutions of the antibiotic, and that peritonitis following fecal soilage can be prevented, or if already established, can rapidly be brought under control. Poth[4] recommends neomycin solution intra-enterically and intraperitoneally for emergency surgery on the unprepared bowel. The use of neomycin intraperitoneally constitutes a form of systemic therapy. It has now been clearly established that excessive (i.e., more than 2 mg. of neomycin per kilogram of body weight) antibiotic in the peritoneal cavity in narcotized, anesthetized patients may result in apnea or respiratory arrest. Aspiration of the bulk of the solution at the end of the operation reduces this hazard. Postoperatively, slow intraperitoneal drip of weak solutions of neomycin or kanamycin for 48 to 72 hours apparently is safe, but is supplemental only to systemic therapy.

The perfusion of solutions of antibiotics in contaminated fields at the time of layer-closure has as its basis the fact that bacteria are still confined to the surfaces of the subcutaneous space and are capable of prolonged contact with the instilled drug. Findley and Johnson[5] have shown that therapeutic levels of saline solutions of neomycin instilled into incisional wounds persist in the subcutaneous spaces for as long as 48 hours, with no apparent evidence of toxicity to the patient. This persistence of effect without cytotoxicity is one explanation for the superiority of neomycin over chemical germicidal agents in preventing infections in wounds made in guinea pigs contaminated with feces and closed after the irrigations. A number of controlled studies support the thesis that, on closing the wound, spraying the tissue layers with antibiotic solutions or powders reduces the incidence of postoperative wound sepsis in wounds heavily contaminated by direct implantation or aerial contamination, despite careful checking and supervision of aseptic precautions. The anti-infective action of local antibiotics is not a substitute for aseptic precautions and gentle handling of tissues, and is, in fact, nullified by wound-healing faults such as hematoma, seroma, dead space and necrotic tissue.

Although the antibiotics have an important role in the treatment of many kinds of infections, their function as prophylactics is purely supportive. They can be expected to be valuable only if and where they are treated as adjuncts, rather than as substitutes, for the basic disciplines of medicine and surgery.

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Attend the
AMA ANNUAL MEETING
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COLISEUM
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Dupuytren's Contracture

RICHARD L. LAWTON, M.D., ROBERT A. CONKLIN, M.D.,
and EDGAR S. BRINTNALL, M.D.

IOWA CITY

THE DEFORMITY THAT is the subject of this paper was first noted by Plator in 1610,[1] and was described by Dupuytren in 1832.[2] Plator referred to it from the standpoint of externals, not relating it to precise pathophysiological observations. Dupuytren related it to a retraction of the palmar fascia.

There is an increasing tendency to refer to the condition as "fibrous contracture of the palmar fascia." This phrase is quite noncommittal, from the standpoint of etiology, and we are not even certain of the somewhat guarded reference to the pathological process.

The cause of the fascial contracture is unknown. Almost everyone who has thought about the disease has suggested a different etiologic factor, and we have begun wondering whether the entity is really a disease or merely a sign. It has been considered by some as a manifestation of a collagen disease process.

Our interest in this disorder and its management was generated by the variety of therapeutic procedures available and by the variations in their results. Over the past eight years, 60 cases have been treated surgically.

ANATOMICAL CONSIDERATIONS

The palmar fascia is the superficial fascia of the hand. It is a triangular sheet with its apex proximal attaching to the palmaris longus tendon and the transverse carpal ligament. The base is distal, and from it usually proceed four extensions (though they vary between two and seven) to fingers 2, 3, 4 and 5. The fascia is deficient proximal to the webs, and here fat extrudes subcutaneously and forms prominences (monticuli). The palmar fascia continues into the finger as the investing digital fascia. The latter attaches to the lateral aspect of the proximal phalanx. The fascia is bound to skin by projections of fibrous tissue, and it is fixed dorsally to the deep volar fascia and metacarpals. In its ventral extensions, it forms compartments for tendon and neurovascular bundles. The fascia is subcutaneous except at flexion creases, where it is very superficial. It is thin over the thenar and hypothenar eminences, and thickest in the part that goes to the fifth digital ray.

Generally, there is a well-developed fatty layer interposed between the skin and the palmar fascia (Figure 1). The deep volar fascia, which covers the interossei muscles, proceeds distalward to attach to the capsule of the metacarpo-phalangeal joints. In the webs, there are transverse extensions of the superficial fascia called the natatory (swimming) ligaments.

PATHOLOGY

Most pathologists believe that the disease process is limited to palmar fascia. Others have pointed out that the blood vessels are involved with a perivascular round-cell infiltration. Some have seen fragments of muscle,[3] presumably remnants of the flexor brevis superficialis manus.

We shall limit this discussion to what is found in the palmar and digital fascia, for it tends to correlate with clinical findings. The cell involved is

The authors are members of the staff in surgery at the Veterans Administration Hospital and the State University of Iowa in Iowa City, and Dr. Lawton presented this paper at the Lake Okoboji meeting of the Iowa Academy of Surgery last September.

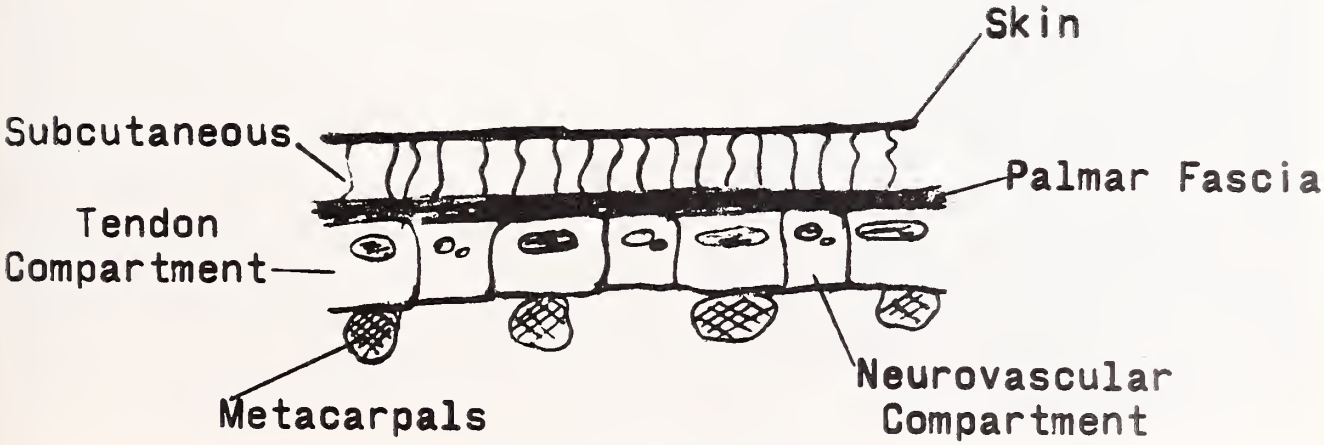

Figure 1. Cross Section of Palm.

the fibrocyte. It may be present in great numbers, or it may be scarce, and it is present in differing degrees of maturity. In the nodular phase of the disease, there is an abundance of immature cells. These usually occur in nests, which cannot be distinguished easily from fibrosarcoma. With the passage of time, the process matures, the nodules disappear, and the main finding is excessive mature scar, with an abundance of collagen. Later, some of the collagen may become hyalinized. At intermediate stages of pathological progression, there may be a mixture of cellular (immature) and relatively acellular (mature) fibrous tissue. This has been designated as the metacellular stage (Figure 2).

CLINICAL FEATURES

Two or three per cent of the population may have this contracture. Characteristically, it begins in patients in their forties or fifties, and is eight times more frequent in men than in women. By the time the entity is called to the physician's attention, an average of five years has elapsed since its incipiency. Palmar, plantar and penile fascia may be involved. In some cases on record, all three fascias in the same individual were diseased. The usual type of involvement, however, is in the palmar fascia and causes contracture of the fourth and fifth digits (manus apostolicus). Any of the fingers may be contracted, and in rare instances the thumb.

The process usually begins in the palm. It is manifested by the presence of nodules in the fascia near the base of the fourth and fifth fingers and in the distal palmar crease. This is the stage when immature fibrocytes are seen on microscopic examination. The disease is slowly progressive, and in time the nodules disappear and the characteristic longitudinal bands begin to appear. Flexion deformity begins at the metacarpo-phalangeal joints, and its progression to the digital fascia is marked by flexion at the proximal interphalangeal joint. The palmar nodularity which may appear late in the disease usually represents distorted subcutaneous fatty masses.

As the early-stage nodules begin to involute, the palmar skin becomes dimpled by the contractive process. Involution signifies the passage from a cellular stage to a relatively acellular stage. The skin is very closely adherent to the palmar fascia in advanced cases, and almost appears to be invaded. This makes dissection very difficult.

As the contracture progresses, changes may take place in the joints which preclude future full extension. Operations aimed at correcting joint changes are frequently unsuccessful.

TREATMENT

Treatment can be divided into medical and surgical. A great number of therapies have been applied under medical aegis, and most have failed. At one time vitamin E was thought to be effective, but few recommend this therapy at present. The same can be said for cortisone, x-ray therapy, ultrasonar, diathermy and unctions.

The treatment is primarily surgical. A number of procedures have evolved. Major consideration should be given to the timing and extent of surgery.

It is possible to control this disease surgically and to secure a perfect anatomical and a lasting functional result. Total ablation of the palmar fascia certainly can achieve these goals, but partial fasciectomy is most frequently recommended and may accomplish the same purposes.

Resection in the early nodular stage, before contracture has occurred, is recommended by some surgeons. Others think recurrence is more fre-

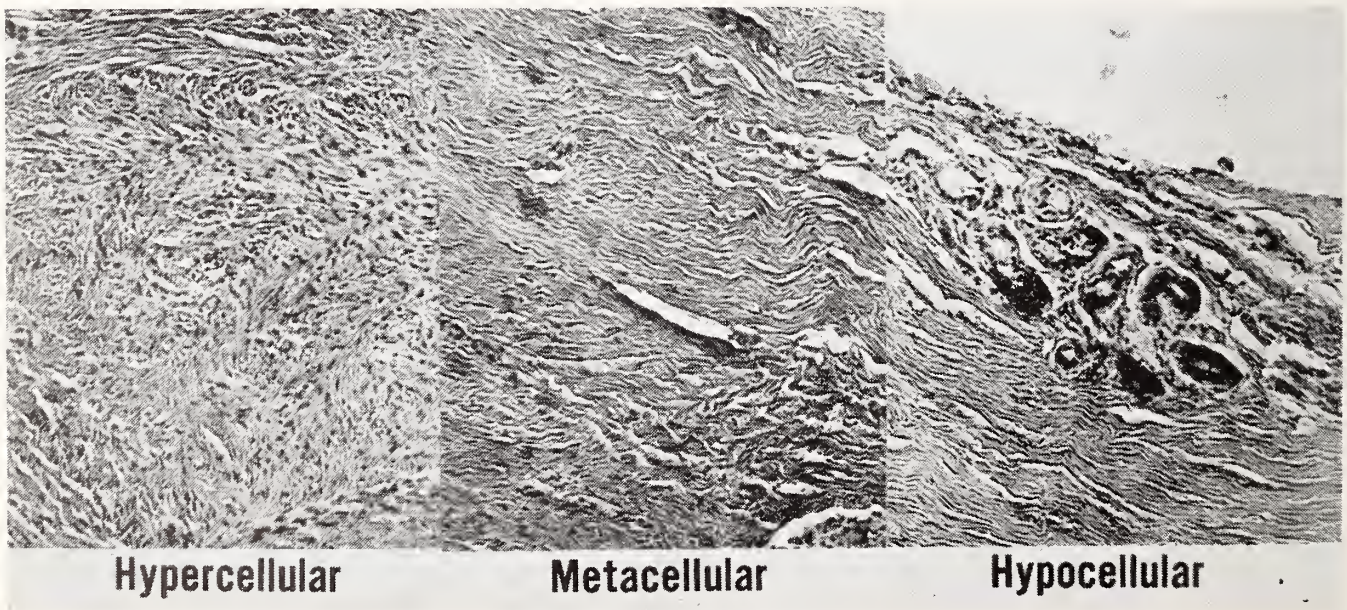

Figure 2. Pathological Evolution.

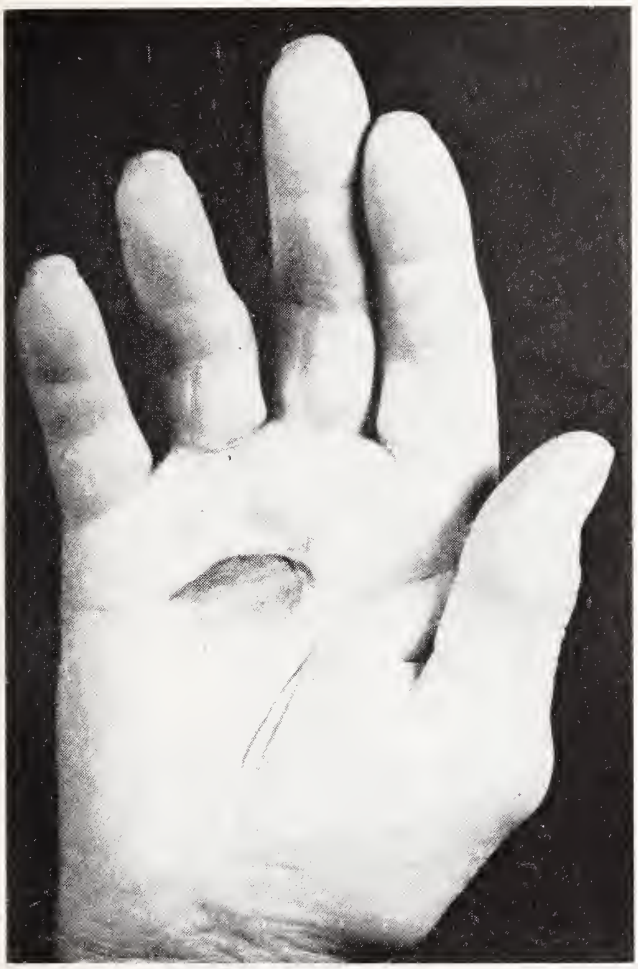

Figure 3. Full-thickness Graft.

quent if resection has been undertaken at this stage. We believe that the involved palmar fascia should be resected before contracture begins, in many instances.

The stage of contracture presents a challenging problem. Partial fasciectomy is usually advised, plus such other refinements as may be deemed necessary. Too little attention has been paid to the process in the fingers, and too much reliance has been placed upon postoperative physiotherapy. The latter is useful and should be employed frequently, but not to stretch contracted skin or residual fascial contracture.

After the excision of the affected palmar fascia, attention should be directed to the fingers. If there is still some contracture of the metacarpophalangeal joint and the proximal interphalangeal joint, a "Z"-plasty, or oblique incision is performed over the first phalanx.[4] This gives excellent exposure for excision of the fascia, and permits visualization of the neurovascular sheath. Closure of the "Z," the preferred type of plasty, lengthens the skin in this area.

If the affected fingers are extended following excision of the fascia, a gap will frequently be noted in the transverse palmar incision. To close the edges will reproduce the contracture in a number of cases. The use of a split-thickness or full-thickness graft (Figure 3) is indicated, and should fill the gap produced with the fingers in extension (Figure 4). A graft should not be used if it must lie on an exposed tendon. In such a situation, it is best to close the skin *per primam,* to rely on physiotherapy, or to utilize an ulnar flap.[5] A finger hopelessly contracted with joint changes should be amputated.

The foregoing presents the overall surgical management. It might be of value to detail the surgical technic further. Anesthesia may be general or brachial-plexus block. General anesthesia is preferred. The hand is made bloodless by means of an elastic bandage and an inflated pneumatic tourniquet.

The partial palmar fasciectomy can usually be done through a single transverse incision at or near the distal flexion crease. If the contracted fascia is closely adherent to the crease, a narrow ellipse of skin can be excised. Proximal and distal flaps are made, as much fat as possible being left attached to the flaps. This can be done by dissecting on the palmar fascia. The fascia is divided proximally near the thenar crease, and superficial palmar arch. One carries dissection distally to the base of the fingers, cutting the deep attachments of the fascia. If indicated, a "Z"-plasty is done in the fingers. Otherwise, the fascia is detached through an incision near the metacarpophalangeal crease.

If the palmar incision gapes, a free full-thickness skin graft is taken from the forearm and "stented" in place. All other incisions are closed with No. 35 stainless steel wire. Before closure of the wound, the tourniquet is released and meticulous hemostasis is obtained.

A compression dressing of mechanic's waste or fluffed gauze sponges is applied and secured with a two-inch elastic bandage. The fingers are "dressed-out" so that their circulatory status can be checked. The dressing must be bulky enough to give some degree of immobilization, but its chief purpose is to provide enough pressure to prevent exudation under the skin edges.

The voluminous dressing may be changed in five days, and a smaller pressure dressing may then be applied. The patient is encouraged to move his fingers. At two weeks, sutures are removed, and the patient is started on active physiotherapy. This need not be prolonged if residual contracture is not present.

There are alternative surgical procedures, and one that has quite a few adherents is subcutaneous fasciotomy.[6] In this procedure a tenotomy knife is introduced from a small ulnar incision, the knife is advanced into the palm over the band, and the band is then cut blindly dorsalward. Modifications of this procedure include excision of nodules and fasciotomy.[7]

COMPLICATIONS

The complications of bleeding and infection are tragic in this area, resulting in an ineffectual and painful hand. Even in the apparent absence of these complications, the patient may lose much digital function. Occasionally, a slough of skin-incision edges occurs, leading to fibrosis and limitation of motion. With subcutaneous fasciotomy, the nerves, blood vessels and, rarely, tendon may be cut. Paresthesias and motor deficits may result from brachial block.

There are few contraindications to excision of contracted fascia. In the poor-risk patient, fasciotomy is recommended with local anesthesia. The contracture may recur, but can be reincised when it does.

DISCUSSION

Anatomically, the palmar and digital fascia is continuous. The fibrous reaction has been known to occur in almost any part of this fascial covering. Most frequently the palm is involved, with or without digital flexion at the metacarpo-phalangeal joint. Occasionally, involvement of the digital fascia may lead to flexion of an interphalangeal joint, with or without palmar contracture. Because the digital fascia may be independently involved, more attention should be focused on resecting the fibrous process in the fingers. If flexion of a digit at the metacarpo-phalangeal joint is the result of palmar contracture, a partial fasciectomy will relieve the contracture. In many instances, the process is found in the digital fascia, necessitating excision in that area. Interphalangeal flexion indicates involvement of the proper digital fascia.

SUMMARY

Although there is much unknown about fibrous contracture of the palmar fascia, we have effective surgical means of treating it. This entity is not "life-threatening," but it does limit the usefulness of the hand—especially the function of grasping large objects—and the cosmetic deformity may cause embarrassment.

The application of a surgical method appropriate to the individual patient, provided that surgical principles are adhered to, minimizes complications and insures an optimal result of treatment.

Figure 4. Skin Defect in Extension.

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Pulmonary Hemosiderosis With Glomerulonephritis

A Report of Two Cases

J. D. LEHMAN, M.D., and K. R. CROSS, M.D.

IOWA CITY

IN RECENT YEARS, cases of idiopathic pulmonary hemosiderosis have been reported relatively frequently in the literature. Initially, these reports concerned cases in children,[1-3] but more and more cases are now being reported as occurring in adults.[4-8] The disease process is characterized primarily by pulmonary hemorrhage, either mild or massive, with x-ray evidence of pulmonary infiltrates. Generally, there are remissions and exacerbations, but a fatal outcome is the rule. Pathologically, the characteristic findings are confined to the lungs, there being either relatively recent intra-alveolar hemorrhage associated with hemosiderin-laden macrophages, or hemosiderin-laden macrophages associated with iron-encrusted, fragmented, elastic fibers of alveolar septa and adjacent vessel walls. No definite etiology has been determined.[9]

Also, in recent years, several cases of pulmonary hemorrhage associated with glomerular disease of the kidney have been reported.[10-13] The pathologic descriptions of the pulmonary findings have, in many instances, been characteristic of idiopathic pulmonary hemosiderosis. Clinically, the pulmonary symptoms also were similar to idiopathic pulmonary hemosiderosis, but these patients generally have been adults and have usually died with uremia.

The purpose of this paper is to report two additional cases that are felt to represent idiopathic pulmonary hemosiderosis associated with glomerulonephritis.

CASE NO. 1

A 29-year-old white male had been in good health except for seasonal hay fever until approximately five weeks before admission to this hospital. At that time, he had developed a "cold," with a cough productive of yellowish mucoid material that soon became blood-streaked. The "cold" had seemed to clear, but the patient had continued to cough up a few flecks of blood. One week before admission, he had an episode of moderate hemoptysis associated with a great deal of coughing. He also had noted chills and fever, and had difficulty in sleeping because of paroxysms of coughing. He then had begun to feel faint and became dyspneic. He was admitted to the hospital following a chest x-ray that revealed bilateral pulmonary infiltrates.

The patient's temperature on admission was 99.6°F., his pulse rate was 120/min., and his blood pressure was 130/60 mm. Hg. He was pale, weak and coughing spasmodically. There were coarse and crepitant rales throughout both lung fields. The remainder of the physical examination was essentially unremarkable.

The white blood count was 12,100/cu. mm., with a differential of 7 per cent bands, 75 per cent neutrophils, 17 per cent lymphocytes, and 1 per cent monocytes. The red blood cell count was 2,090,000/cu. mm., and the hemoglobin was 6 Gm./100 cc. The chest x-ray showed mottled areas of increased density, spread uniformly throughout all portions of both lungs—slightly more nodular and discrete on the left.

The patient was given oxygen by nasal catheter, and 500 cc. of whole blood was given intravenously, followed by saline. He became restless, however, his respirations increased, and his pulse rate rose to 160/min. He suddenly became more restless, developed "air hunger," coughed up large quantities of bright red blood and died, having been in the hospital less than 10 hours.

The autopsy data are limited to the significant findings:

Gross: The lungs were voluminous and deep purple-red. The right weighed 1,600 Gm., and the left, 1,250 Gm. Petechiae were scattered over the

Drs. Lehman and Cross are members of the staff in pathology at the Iowa City Veterans Administration Hospital.

surfaces. On cut section, they exuded large amounts of deep-red bloody fluid.

Each kidney weighed 180 Gm. The capsules stripped with ease. The surfaces were covered with pin-point ecchymotic areas. On cut section, there was prominent vascular congestion.

Microscopic: There was extensive intra-alveolar hemorrhage throughout the lungs. Alveolar walls in general were intact, except in areas that were considered to be older, where there was early breakdown and loss of identifiable alveolar lining cells. In these areas, there were numerous hemosiderin-laden macrophages. The inflammatory response was minimal, with a few neutrophils and macrophages scattered in the alveolar septa in the areas that were thought to be older. There was no evidence of inflammation about the blood vessels (Figure 1).

There was cellular proliferation of the tufts of scattered glomeruli of the kidneys, and there were foci of fibrinoid degeneration within the tufts (Figure 2).

CASE NO. 2

A 61-year-old white male was admitted to the hospital with a two-month history of unproductive dry cough. Two weeks before admission, he had noted dyspnea at rest.

The past history was unremarkable, except for a goiter that had been treated with x-ray and Lugol's solution in 1927.

On initial physical examination, there was marked dyspnea and pallor. There were dry, crackling rales in the right anterior chest, and occasionally at the bases of the lungs. The remainder of the physical examination was unremarkable.

Initial laboratory examinations were as follows: white blood cell count, 5,400/cu. mm.; hemoglobin, 10.4 Gm./100 cc.; hematocrit, 32 volumes per cent; red blood cell count, 3,160,000/cu. mm.; blood urea nitrogen 28 mg. per cent; and creatinine 1.3 mg. per cent. In the chest x-ray, there were irregular infiltrations within the lingula and radiating from the right hilum. Urinalyses throughout the patient's hospitalizations varied as follows: albumin 0-3+; specific gravity 1.015-1.027; red blood cells 7-50, and white blood cells occasional to 10 per high-power field; and occasional granular casts.

Five days following admission, there was bloody sputum. The hemoglobin had dropped to 7.4 Gm./-100 cc., and there had been a marked advance of the infiltrates in both lungs, particularly in the apices, as indicated by chest x-ray. The BUN had risen to 59 mg. per cent. He had been treated initially with antibiotics, and these were continued. However, he was acutely ill and was considered moribund. The hemoptysis continued. Eight days after admission, without there having been any clinical response to antibiotics, prednisone was started, 15 mg. every six hours, and the results were dramatic. Hemoptysis ceased, and the patient improved clinically. There was considerable clearing of the pulmonary infiltrates, according to x-ray, but the BUN continued to rise. Transfusions were required for anemia. However, when steroids

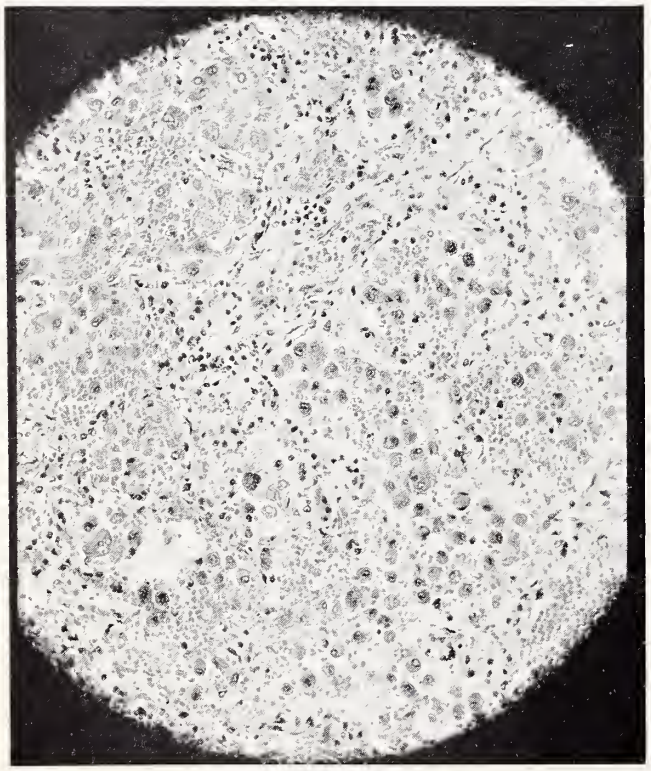

Figure 1. Lung, with numerous intact red cells and hemosiderin-laden macrophages within the alveoli. Hematoxylin and eosin stain. ×223

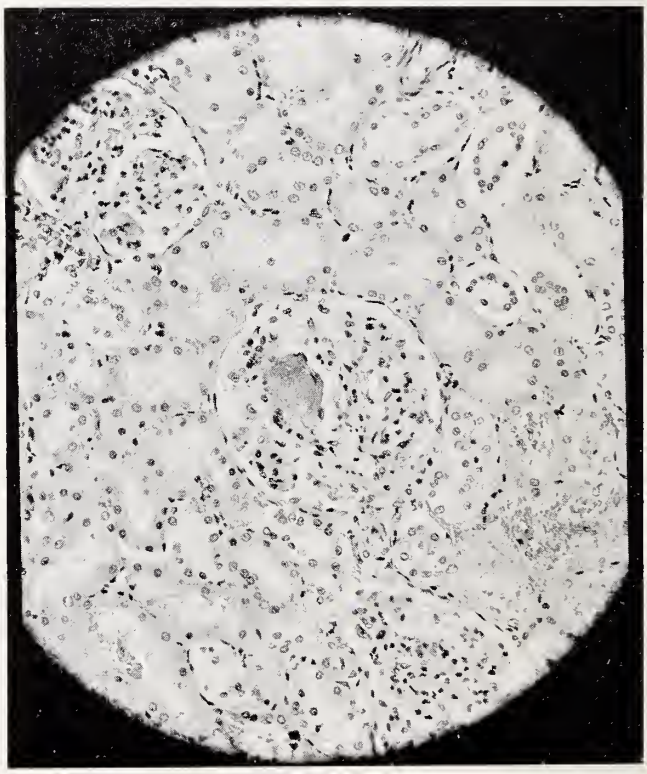

Figure 2. Kidney, with an enlarged glomerulus, a cellular tuft and a discrete focus of fibrinoid degeneration. Hematoxylin and eosin stain. ×223

were discontinued, there was clinical and x-ray recurrence of pulmonary disease. Steroids were immediately resumed, and again there was dramatic improvement.

He was maintained on steroids and followed at intervals in the hospital. The pulmonary symptoms were in abeyance, but he continued to be azotemic, and soon developed hypertension and anemia.

He was last admitted to the hospital approximately three years following his first admission. At that time, the hemoglobin was 6 Gm./100 cc., the BUN was 115 mg. per cent, and the creatinine was 6 mg. per cent. He continued to go gradually downhill, and one month following admission he developed signs and symptoms of diverticulitis. His general condition was so poor that therapeutic measures had to be conservative, and he expired one week later.

The autopsy data are limited to the significant findings.

Gross. There were numerous diverticula of the sigmoid colon, and one entered into a cul-de-sac abscess 3 cm. in diameter. There was an intense inflammatory reaction of the surrounding tissue.

The right lung weighed 700 Gm., and the left weighed 550 Gm. They were moderately edematous, and their color was pale rust mottled with black throughout. No unusual focal lesions were noted.

Each kidney weighed 75 Gm. The surfaces of these organs were granular and pitted. They were pale, with reddish, punctate areas throughout. The cortices were narrow and indistinct.

Microscopic. There was moderate congestion of the lungs, and alveoli in focal areas were filled with precipitated protein. Hemosiderin-laden macrophages were prominent throughout. In large areas, vessel walls and alveolar septa contained iron-encrusted, fragmented elastic fibers. An occasional multinucleated foreign-body type giant cell was associated (Figure 3).

Both kidneys contained glomeruli in various stages of degeneration, varying from thickening of Bowman's capsule to nodular hyalinization of portions of the glomerular tuft and to partial and complete hyalinization of the glomerulus. There were interstitial fibrosis, scattered chronic inflammatory cells, and amorphous and calcific casts within many tubules (Figure 4).

COMMENT

In these cases, the pulmonary and renal lesions appeared to be of comparable ages. In Case 1 there was fairly recent massive intrapulmonary hemorrhage associated with a renal lesion classifiable as an acute glomerulonephritis. In Case 2 there was no evidence of recent hemorrhage, and the duration of the clinical symptomatology was approximately four years. The renal lesion was that of a chronic glomerulonephritis, the kidneys being "end-stage" ones. In both cases ante mortem and post mortem bacteriological, fungal, and viral studies were non-contributory.

In view of the typical findings described for idiopathic pulmonary hemosiderosis in both cases, one is compelled to consider the combination of pulmonary and renal disease as having been, in

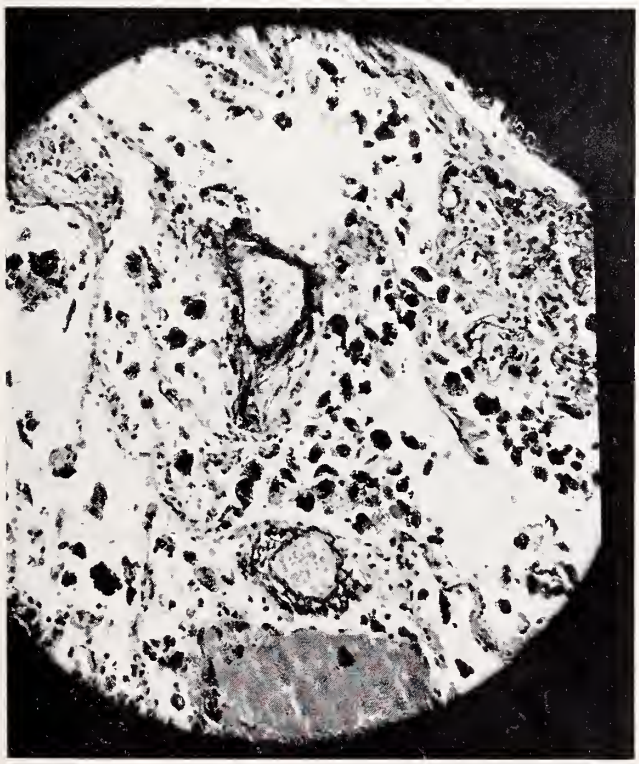

Figure 3. Lung, with numerous dark, hemosiderin-laden macrophages and iron-encrusted, fragmented elastic fibers in the vessel and alveolar walls. Hematoxylin and eosin stain. ×243

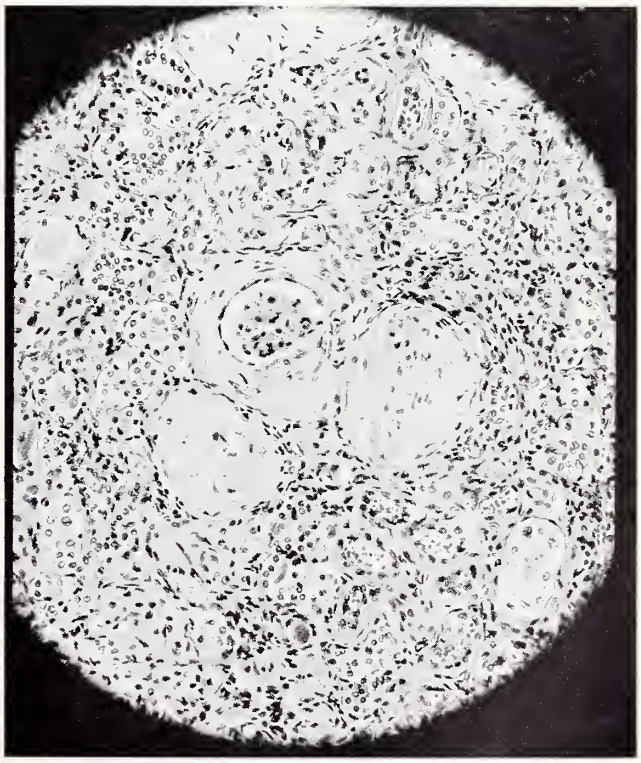

Figure 4. Kidney, with fibrotic, partially hyalinized glomeruli and tubular casts. Hematoxylin and eosin stain. ×223

all probability, a reaction to a single etiologic agent. No definite etiology has been determined for idiopathic pulmonary hemosiderosis. Initially, a structural defect in the elastic tissue was postulated.[4] Later, episodes of pulmonary hypertension were regarded as the basic factor.[3] The concept of a hypersensitivity state with the pulmonary bed as the end organ has been strongly considered in recent years,[4] and the possibility of an auto-antibody reaction has also been entertained.[14] In the present cases, the concurrent renal lesion of glomerulonephritis strongly suggests a hypersensitivity state with both the lungs and the kidneys as end organs. It is interesting that Case 1 had an allergic history consisting of seasonal hay fever. In Case 2, no specific sensitivity was determined. However, steroid therapy did bring about a dramatic clinical recovery from pulmonary symptoms.

In neither case was there evidence of angiitis or granulomatosis. This lack of findings would virtually remove the possibility of considering these cases as a variant of polyarteritis nodosa[15, 16] or of Wegener's granulomatosis.[17]

SUMMARY

Two cases of combined pulmonary-renal disease have been presented. They have been considered as representing the disease process known as idiopathic pulmonary hemosiderosis associated with glomerulonephritis. A hypersensitivity state is regarded as the most likely etiologic factor.

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TRAUMA—ANESTHESIOLOGY

On successive days, May 15 and 16, there are to be postgraduate courses on trauma and on anesthesiology in the Conkling Hall Postgraduate Conference Room at the University of Nebraska College of Medicine, in Omaha. The fee for each course is $15.

Sixth Annual Trauma Day, May 15

9:00 a.m. "Immediate Care of Eye Injuries"—Robert D. Vickery, M.D.
9:30 a.m. "The 'Traumatic Surgeon' and the Surgery of Trauma"—Robert T. Tidrick, M.D., S.U.I.
11:00 a.m. "Acute Radiation Syndrome"—Lt. Col. Hugh B. Mitchell, USAF, MC, chief, Bionucleonics Section, Office of the SAC Surgeon
11:30 a.m. "Management of Acute Chest Injuries"—Louis E. Hanisch, M.D.
12:00 noon "Farm Injuries"—C. W. McLaughlin, Jr., M.D.
1:30 p.m. "Choice of Surgical Procedures in Segmental Enteritis and Ulcerative Colitis"—Dr. Tidrick
2:30 p.m. "Management of Acute Fractures"—Frederick F. Teal, M.D.
3:30 p.m. "Mass Casualty Care"—Lt. Col. Mitchell
4:00 p.m. Tour of Underground Control Center, Offutt Air Base
6:15 p.m. Social Hour and Dinner—Air Base Officers' Club
"The Role of SAC in Today's Uneasy World"—Major General William H. Blanchard, USAF, director of operations, Strategic Air Command

Anesthesiology, May 16

9:00 a.m. "How to Avoid Complications Following Spinal Anesthesia"—John R. Hyde, M.D.
9:30 a.m. "Pre-anesthetic Evaluation and Preparation"—John M. Hansen, M.D., associate professor of surgery, University of Kansas
11:00 a.m. "Temperature Control on the Ward"—Russell C. Brauer, M.D.
11:30 a.m. Panel Discussion: "Hypnosis and Pain Control"
1:30 p.m. Monitoring Demonstration—John L. Barmore, M.D.
2:00 p.m. "What's New in General Anesthesia"—Dr. Hansen
3:30 p.m. Resuscitation Panel
Closed Chest—Mr. Lee A. Skaggs
Respiratory—Muriel N. Frank, M.D.
Resuscitation in the Newborn—James G. Carter, M.D.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 63-YEAR-OLD, WHITE feed-mill laborer was admitted to the University Hospitals because of pain in the back for three months. The pain was located high in the region of the shoulder blade and just to the left of the midline. Because of the pain, he had quit his job. The pain was fleeting at first, but two months before admission it had become constant. It was so severe that he didn't dare to sneeze or cough. He had taken large doses of aspirin, and had had eight to 10 chiropractic treatments without relief. Four months before admission, he had had his teeth pulled. Thirty-five years before admission, he had had "pleurisy" and had been treated with three months of bed rest.

Physical examination revealed a well-developed, well-nourished man who did not appear to be acutely or chronically ill. The blood pressure was 130/80 mm. Hg, the pulse was 60/min., the weight was 158 pounds, and the temperature was 99° F. The positive physical findings were a slight gibbus at T-5 and 25 per cent less grip on the right than on the left. Three observers described the heart as normal. The urinalysis was normal. The hemoglobin was 12.8 Gm., the white blood cell count was 8,850/cu. mm., and the sedimentation rate was 28 mm./hr. Lumbar puncture revealed clear fluid with an initial pressure of 150 mm. water. A Pandy test was negative, 2 cells/cu. mm., and the total proteins 23 mg./100 ml. The chest x-ray was normal. X-ray examination of the thoracic spine revealed destruction of the disk space between D-6 and D-7 and loss of volume of both the 6th and 7th vertebral bodies. There was angulation in this area, but the vertebrae were not fused.

The clinical diagnosis was chronic granulomatous lesion, probably Pott's disease, D-6, D-7, and the recommended therapy was bed rest for six months and dihydrostreptomycin, 0.5 Gm. twice a week. Four months later, the patient returned for a recheck examination. He had been up and around at home, against advice, but had received dihydrostreptomycin. He had gained weight and was free of pain. There were neither night sweats nor loss of appetite. No tinnitus or hearing loss was noted. He was told to continue the dihydrostreptomycin. Three months later, the patient returned for his second follow-up examination. Roentgenograms of the spine showed that the area was well fused. Streptomycin was discontinued, and Isoniazid was substituted in a dosage of 100 mg. three times daily for two months.

The patient returned 20 months after his initial visit, with a history of high fever for two weeks. The patient's wife was the principal informant on this occasion. She stated that his back had not hurt during the year, and that he had taken Isoniazid for two months as recommended, and then had stopped it. He had returned to work in the feed mill, and had worked until one month prior to this admission. Two months before this admission, he had noted pain in both shoulders. Six weeks before admission, his left arm had suddenly become numb, and for two days he had been unable to move it. This condition had gradually improved. Two weeks before admission, chills, fever and cough had developed. One week before admission he had been hospitalized near his home and treated with penicillin and streptomycin, but without improvement. His fever and white blood cell count continued to rise. He completely lost his appetite. His cough worsened. He complained of severe headaches and became delirious.

Physical examination revealed an acutely ill man with a flushed face and body. He was delirious. The blood pressure was 130/85 mm. Hg, the pulse rate was 108/min., the temperature was 104° F., and the respiratory rate was 28/min. Petechial hemorrhages were present in the skin above the abdomen and chest, and there was an ecchymotic area over the right triceps muscle. The neck veins remained distended and pulsating when the patient sat at a 45° angle. The anteroposterior diameter of the chest was normal, and expansion was good. Fine rales were heard over the anterior chest and in the bases. The left border of cardiac dullness was slightly beyond the midclavicular line. Precordial transmission of cardiac activity was 1+ increased over normal. A normal sinus rhythm was present, and the second aortic sound was equal to the pulmonary second sound. A grade I systolic thrill was palpable at the apex. A grade III systolic murmur was heard at the apex and also over the entire precordium and at the back. The abdominal muscles were tense. The liver edge was four fingerbreadths below the costal margin, as determined by percussion, but the edge could not be felt. The spleen was not enlarged. The right leg was warm and appeared normal; the left leg was cold to palpation below the knee. The patient's wife stated that this change in temperature of the left leg had occurred seven days previously, and that the patient had never complained of leg pain. The right femoral pulse was barely palpable, and the left femoral pulse was not palpable.

Urinalysis revealed a specific gravity of 1.012, 1+ albumin, no sugar, no blood, and 2-4 white blood cells and 2-4 red blood cells per high-power field in a centrifuged specimen. The hemoglobin was 12.5 Gm./cu. mm., and the white blood cell count was 28,450/cu. mm., with 88 per cent segmented polymorphonuclear leukocytes. The platelet count was 292,000/cu. mm. Five blood cultures were sterile. Postero-anterior and lateral roentgenograms of the chest were interpreted as showing cardiac enlargement and pulmonary congestion. A comparison with studies made two years earlier indicated that an increase in heart size had taken place. An electrocardiogram showed ST and T-wave changes compatible with myocardial disease. There was no evidence of right or left ventricular hypertrophy. A normal sinus rhythm was observed. The serum sodium concentration was 140 mEq./L.; potassium, 3.8 mEq./L.; and CO_2 content, 23.8 mEq./L. The BUN was 11.0 mg./100 ml., and the creatinine 0.9 mg./100 ml. Numerous neutrophils were seen in a bone marrow examination, but no leukemic cells. On the third hospital day, a lumbar puncture showed clear fluid without cells and with a protein concentration of 100 mg./100 ml.

The patient's course was that of a severely ill man. His condition worsened steadily, and he died four days after admission. On his first day of hospitalization, he was treated with 2,400,000 units of penicillin, and on the second day he received 10,000,000 units of penicillin and 1 Gm. of streptomycin. On the third day he got 100,000,000 units of penicillin and 2 Gm. of streptomycin, and on the fourth day Chloromycetin was added to the therapeutic regimen. On the third hospital day, a prolonged, generalized grand mal seizure occurred, and this was terminated only after the administration of large doses of amytal and pentobarbital. Afterward, he was sleepy until the time of his death, 24 hours later.

SUMMARY OF CLINICAL DISCUSSION

Mr. Curtis Clark, junior ward clerk: We students feel that this protocol, as it has been presented here, can best be explained as follows. The patient gave a history of having had pleurisy 35 years ago, and said it was treated with three months' bed rest. We feel that the illness may conceivably have been tuberculosis. He also had had his teeth pulled one month before the onset of his symptoms, and that procedure could have opened a portal of entry for any organism that happened to be in his mouth at that time.

When he was admitted here for the first time, the clinical diagnosis was chronic granulomatous lesion, probably Pott's disease D-6, D-7. According to Robins, it is impossible to differentiate Pott's disease clinically from an inflammation of bone due to a pyogenic organism or a fungus. According to Larson, a biopsy must be performed to establish the specific etiologic agent.

Then at the time of his second admission, the patient showed signs and symptoms of what we believe was acute bacterial endocarditis. First, he showed signs of an infection—chills, fever, increased white count and 88 per cent segmented polymorphonuclear leukocytes. Second, he showed signs of embolization. His neurologic findings would be compatible with emboli to the brain. His cerebrospinal-fluid findings would be compatible with a brain abscess. He had a barely palpable right femoral pulse, and the left femoral pulse was not palpable. This finding would certainly be compatible with a saddle embolus at the bifurcation of the aorta. He had some albuminuria, and 2-4 white blood cells and 2-4 red blood cells per high-power field, which would be compatible with kidney emboli.

Now, we come to the statement that five blood cultures were sterile. But one week before his admission to this hospital, he had been in a local hospital and had been treated with penicillin and streptomycin. This therapy could have suppressed the bacteria that were in the blood stream. Also, we don't know whether those cultures were kept long enough for a slow-growing organism to have grown out—one such as a fungus or the tubercle bacillus or perhaps Brucella.

At that time, the patient also showed signs of congestive heart failure—possibly due to a concomitant myocarditis—or, since there was an apical thrill and murmur, perhaps it was due to an erosion of a valve leaflet or the rupture of the chorda tendineae by vegetations.

Therefore, we wind up with two possibilities. Either the lesion in the spine and the heart lesion were unrelated, or as we believe more likely, they were related. Perhaps when this man went back to work, his spine lesion broke down, and organisms seeded the blood stream, causing the development of an acute bacterial endocarditis, congestive failure and death.

We should like, however, to pose several questions. First of all, were skin tests for mycoses and tuberculosis done on the first admission? Also, was the spine lesion biopsied or aspirated at that time, and were sensitivity tests or smears done? We should like to know whether Brucella agglutinations were ever done. Was there ever any evidence of actinomycosis, such as a residual lesion in the mouth? Was the bone marrow that was aspirated on the second admission ever cultured? And finally, were the blood cultures kept long enough for the slower-growing organisms to show up?

Although we believe it would be possible for all of the findings to have been due to tuberculosis alone, we feel that such a thing would be very unusual.

Dr. George N. Bedell, Internal Medicine: I can answer a few of your questions, but I'll have to look before telling you about the skin tests. Brucella agglutination tests were not done. The lesion

in the spine was not biopsied. The bone marrow was looked at for morphology, but a bone marrow culture was not done. The blood cultures were sterile at the time of the patient's death, and were kept for quite a while afterward but still did not grow any organisms.

Dr. Robert C. Hardin, Internal Medicine: I have very little to add to the student's discussion, except to say that I went at the problem backwards, starting with the man's terminal illness because it seemed easier to diagnose. I would agree that the story of his terminal illness is that of bacterial endocarditis. We note the evidences of infection; the evidences of localization in the heart; and the embolic manifestations such as the petechial hemorrhages, the ecchymosis over the triceps, the saddle embolism and the cerebral manifestations which could be explained on the basis of embolism.

If this is, indeed, endocarditis, we have to note some peculiarities. One is the rapid course leading to cardiac failure. Cardiac failure does occur in bacterial endocarditis. In the pre-antibiotic era it was the common termination, if embolism didn't bring the death of the patient first. But in endocarditis lenta, or subacute bacterial endocarditis, heart failure often fails to make an appearance for a good many weeks. It seems that heart failure began rather early in this patient—within two weeks of the time he developed fever. This timing is more like what was seen in the patients with so-called acute endocarditis. We should expect from this and from the white count of 28,000 (which was high for a patient with subacute endocarditis, but not for one with acute endocarditis) that the organism would have been different from the one usually found, i.e., the non-hemolytic streptococcus. We should expect to find a hemolytic streptococcus, or a staphylococcus, or one of the rarer organisms in this patient.

Working from there, I'd like us to go back. First, note that the patient had a lumbar puncture on each of his admissions. The first one was entirely normal, and the second one revealed no abnormality except for the elevated spinal-fluid protein. As the student has noted, this could have been due to an abscess. The spinal fluid protein of 100 mg./100 ml. could have been due to many other things, however. One of them is vascular damage of any sort to the brain. We don't necessarily need to have an abscess, and that is the point I wanted to make.

Now going backwards again, can we tie the patient's original illness to his final one? The interesting thing here is that the man had a lesion of the spine which was thought to be a granuloma. This has been well discussed. It could have been due to a good many things that only a biopsy could have identified. I wonder whether we may see the films at this time, please. I should like to ask specifically whether the diagnosis of brucellosis is possible with this picture.

Dr. Carl L. Gillies, Radiology: The film on your extreme left demonstrates a narrowing of the intervertebral-disk space between the 5th and 6th dorsal vertebrae. This finding is most commonly seen in tuberculosis, but is compatible with other infections. I think brucellosis could have produced this picture. In fact, there is some sclerosis present in the bone which is not a finding that is made in tuberculosis. Also, there is no perivertebral abscess. In the follow-up film obtained on the patient's second admission, the process has completely healed and there is bony union between these two bodies. The bony structure is essentially normal except that the intervertebral-disk space has completely disappeared. This I would not expect with tuberculosis. Thus, in my opinion, this lesion was not tuberculosis, but is more likely to have been pyogenic infection or perhaps brucellosis.

The last film, as you see, is of the chest, taken at the patient's final admission. It shows cardiac enlargement with passive congestion of the lungs.

Dr. Hardin: Well then, I think I can sum up very quickly. I should think that this man had an acute bacterial endocarditis. It may have been due to any number of pyogenic organisms, but the chance that it was brucellosis must be given first rank.

Dr. Bedell: I must confess an error. In looking back through the chart in regard to the spine lesion, I find that a Brucella agglutination was done, and it was negative. A skin test for tuberculosis was done, and it was positive. The clinical diagnosis was bacterial endocarditis, acute. No one ventured a guess as to the type of endocarditis. I presume that because the patient was so desperately ill and because very large doses of penicillin were used, it may very well have been thought to be a staphylococcus endocarditis.

Dr. Carleton D. Nordschow, Pathology: The interesting findings were present in the heart, in the ramifications of the vascular tree, in the lung and in the prostate gland.

Both the tricuspid and mitral valves of the heart were the sites of irregular, white vegetations. The valves *per se* were slightly thicker than normal, but the chordae tendineae were not so thickened. From the microscopic examination, it was evident that each vegetation consisted almost entirely of masses of tangled fungal mycelial forms, in addition to the usual mixed inflammatory-cell exudate. These fungi were identified morphologically, not via culture, as a species of Aspergillus. Bacteria were not present, either in gram stain preparations or in bacterial cultures.

Septic thrombi were found in the bifurcation of the aortic artery, in the right and left common iliac arteries, in the superior mesenteric artery, in the splenic artery, in many cerebral arteries, and in the main pulmonary artery segment to the right lower lobe. Fungi were demonstrable in the thrombi.

The prostate was the site of extensive purulent

abscess formation. These abscesses contained myriads of fungi. A large obstructing bronchial adenoma was present in the main-stem bronchus to the right lower lobe. Distal to the obstruction, there were bronchiectasis and regional chronic pneumonitis. Fungi were not demonstrable in this area. This adenoma, or adenocarcinoma as it should more properly be called, invaded into but not completely through the bronchial wall. It possessed largely the carcinoid type of histologic pattern.

The additional findings of note which did not contribute directly to the death of this patient are listed in the summary.

In areas in which fungi had been disseminated from the cardiac valves, they produced either hemorrhagic or non-hemorrhagic infarction, except in the prostate gland. In that organ, there was no evidence of arterial obstruction. It is upon this basis that one can suppose the prostate to have been the original portal of entry into the vascular system.

Death is attributed to massive intracerebral hemorrhage secondary to septic (mycotic) thrombosis of cerebral arteries. The principal and largest of these occurred in the temporal lobe of the right side.

Dr. Raymond F. Sheets, Internal Medicine: What was the diagnosis on the first admission?

Dr. Bedell: The clinical diagnosis was tuberculosis of the spine. This had been thought to be healing quite satisfactorily.

Dr. Ian Maclean Smith, Internal Medicine: When Aspergillus is found in the lung, there is always a question about whether it is a chance invader or a pathogen. There is a great deal of superinfection in lung disease, as the literature clearly indicates. The exceptions are the patients with invaded veins. Now, it can be presumed that in endocarditis the organism must have invaded blood vessels. Are there any other cases of Aspergillus endocarditis in the literature?

Dr. Nordschow: Do you mean a chance invader by air-borne distribution in the bronchial tree?

Dr. Smith: Some other disease might have been superinfected with Aspergilli.

Dr. Nordschow: Well, that question is a little hard for me to answer. In this case, the fungi didn't appear in the vessel wall within the lung, but appeared only within the clot. There were none within the bronchial tree, and I really have no basis for knowing whether that would be good grounds on which to decide whether it was of primary origin. One would have to prepare a large number of sections, I think, to prove definitely that it was or it wasn't, and of course if one did see direct invasion, as you stipulate, then I think he could say very firmly that it was the origin. Otherwise, I'm not at all sure it could be eliminated.

Dr. Bedell: Apparently there was no connection, then, between the lesion in the patient's back, which was completely healed at the time of postmortem, and the terminal illness, which was bacterial endocarditis. I checked through the records in regard to examination of the prostate gland. This man was extremely ill when he came into the hospital, and a rectal examination wasn't done, even though a number of people examined him. I presume that if there was tenderness of the prostate, it would have been difficult to make sure of it.

This case poses one problem: the type of endocarditis is unusual. I should like to ask some questions. If we are dealing with a patient in whom we suspect an endocarditis and if early cultures fail to reveal anything, should we suspect a yeast organism or a fungus? And how can either type of organism be demonstrated by culture? If we were able to make this diagnosis, is there anything special in the way of therapy which would be helpful?

Dr. John Cazin, Jr., Bacteriology: I should like to help clarify a point brought up by Dr. Smith. There is a limited amount of information in the literature concerning mycotic endocarditis caused by Aspergillus species. Of the 31 authentic cases of mycotic endocarditis which have been reported, only four have been shown to have been caused by Aspergillus.[1-3]

Even when one uses proper culture technics, Aspergillus endocarditis apparently is a little difficult to prove. In one of the studies to which I have just referred, 42 consecutive blood specimens from one individual were examined by culture but not a single organism was isolated. Yet, when autopsy specimens from that same individual were cultured, Aspergillus fumigatus was recovered without difficulty.

In the case under discussion today, all cultures were reported as negative. We received six blood specimens from the patient, and we received sufficient autopsy material for culture studies. I have no explanation for our failure to recover an organism from the specimens. Moreover, we were told by the pathologists that mycelial elements appeared to be present in the tissue. Consequently, we made an intensive effort to isolate an organism in this particular instance, but without success.

There are several fungi which present similar morphological pictures in tissue sections. However, from what can be seen in the sections shown today, I too would suggest that this is probably an Aspergillus species. At best, this can be only a tentative diagnosis of Aspergillus endocarditis, since neither the genus nor the species of the organism can be positively identified without supporting culture proof.

In going through the literature with the thought in mind that this particular case might be a mycotic endocarditis, I found that there are at least two special circumstances in which mycotic endocarditis should be strongly suspected. One of these is when the patient has a known systemic mycotic

infection and there are physical signs of an endocarditis. The other is when the patient has a clinical picture of subacute bacterial endocarditis, no obvious evidence of mycotic infection, and routine blood cultures that are sterile. In either of these situations, an intensive search should be made for a mycotic agent. Skin testing and serological studies may also be of some value, especially in the latter instance.

Of the 31 reported cases of mycotic endocarditis, approximately a third were caused by Candida species (most often by Candida albicans); a third were caused by Histoplasma capsulatum; and the other third Blastomyces, Coccidioides, Aspergillus, Cryptococcus, Mucor, etc.

Mr. Clark questioned whether or not this may have been a Mycobacterium tuberculosis infection. Blood specimens and a throat swab were the only materials sent to us for examination. There were no requests for guinea-pig inoculation or culture studies for Mycobacterium tuberculosis.

Dr. Smith: Is the fact that this man worked in a feed mill of any significance with regard to his acquisition of Aspergilli? And here are some other questions. What is the usual white count? Does the white cell count fit the diagnosis or not? I understand that this is a disease that kills penguins in the zoo and that it has something to do with the environmental temperature. Thus, would you grow blood cultures at 20° C. or at 37° C.?

Dr. Cazin: As for Dr. Smith's first question, it is known that various species of Aspergillus occur in nearly all natural grains. These organisms are quite ubiquitous in nature. They are found in large numbers in the soil and in the air that we breathe. Since spores from these organisms are likely to be present in the oral flora at most times, the mouth seemed to me the logical portal of entry to consider, in view of the patient's tooth extractions.

I don't know what the usual white cell count is supposed to be under these circumstances, and I don't know whether the high white cell count fits in with the entire picture.

The last question that Dr. Smith asked concerned the effect of environmental temperatures used by our laboratory in an attempt to isolate the organism. I don't know whether penguin aspergillosis is related to environmental temperature. However, I wonder whether he assumed, when he asked the question, that the body temperature of the penguin is below 37° C., and that it thus might be impossible to isolate the organism by culturing specimens at 37° C. It is true that some fungi will not grow at 37° C., but as a result, those same fungi will not infect human beings.

As a matter of fact, we always use incubation temperatures of 37° C. and room temperature in our culture studies for fungi. All saprophytic or pathogenic fungi will grow to some extent at either of those two temperatures. Some fungi grow much better at a lower temperature, and some fungi grow much better at a higher temperature, but all will grow at either 37° C. or at room temperature.

Student: If, in this patient, someone had suspected a mycotic endocarditis but had no idea as to what organism had caused it, what therapeutic maintenance would he try?

Dr. Smith: Basically, one would try Amphotericin. Off hand, I don't know whether it would affect Aspergillus or not. It affects most fungal infections, I think, with the exception of coccidiodomycosis. I think Dr. Cazin could help me on that.

Dr. Cazin: Yes, this antibiotic hasn't been too successful with either coccidioidomycosis or aspergillosis, but there has been some limited degree of success.

Dr. Henry E. Hamilton, Internal Medicine: What did you have in mind, Dr. Smith, when you asked about the white count?

Dr. Smith: I talked this over with a colleague before coming, and decided that this man had a staphylococcal osteomyelitis and a staphylococcal endocarditis because it is unusual to see such a high white count in the absence of a Staphylococcus or other pyogenic organism. I am wondering whether the Aspergillus was a later invader, and whether the Staphylococcus may have already been dealt with. That was my idea, but I just don't know what one could expect in the way of a white count in a fungus endocarditis. In a subacute bacterial endocarditis due to Streptococcus viridans, it is somewhere between 8,000 and 14,000—not very high.

Dr. Bedell: The patient had an overwhelming infection with organisms in many organs, and I think in view of this fact we might accept this very high white blood cell count as just a response to a very severe infection.

Dr. Smith: It also might have been in response to severe hemorrhage in the brain or to necrosis.

Dr. Jack M. Layton, Pathology: The principal reacting cell to Aspergillus is the neutrophil. That might help to explain it.

Dr. Bedell: Therefore we might anticipate a high white blood cell count with a high neutrophil count.

Student: I should like to ask Dr. Cazin whether, in the other cases of Aspergillus endocarditis, there was a primary lesion on the heart valves.

Dr. Cazin: Of the 31 cases of mycotic endocarditis reported in the literature, four had been caused by Aspergillus species. In one of those cases, involvement of the heart had been preceded by generalized aspergillosis. In the other three cases, the heart appeared to have been the initial site affected by the hematogenously-borne fungus. The heart valves showed little if any evidence of preexisting damage in those three cases.

Dr. Smith: I think it should be mentioned that Dr. Marion Jones has an excellent review of all the unusual causes of bacterial endocarditis.[4]

Dr. Bedell: The student's question is a good one, because most cases of endocarditis do occur on heart valves that have been previously damaged in some way. As far as we can tell clinically, the patient didn't have heart disease before his terminal illness, and the pathologist says that the heart didn't reveal any evidence of old rheumatic injury. It is apparent that this man developed the endocarditis on what was, as far as we know, a normal heart valve.

Dr. Layton: I don't like to see Dr. Hardin left in the lurch. Why wasn't the vertebral lesion brucellosis?

Dr. Bedell: I don't think we can exclude that as a possibility. A positive bacteriologic diagnosis was never made, and the lesion healed. I think the same question could be asked in regard to tuberculosis. Why wasn't it tuberculosis?

Dr. Layton: I think Dr. Gillies gave us a couple of good reasons why it probably wasn't tuberculosis. I should like to ask Dr. Cazin what the significance of the negative Brucella agglutination may have been. Would he be influenced one way or another by a single agglutination?

Dr. Bedell: In regard to the spine lesion's being brucellosis or not, we must remember that at the time of the patient's first admission the spine lesion was well-developed, and an agglutination test for brucellosis was done, and was negative. The titer was zero.

Dr. Cazin: The fact that the titer was zero tells you nothing. As a matter of fact, a single serological test of any type is of very limited value.

Dr. Bedell: Well, when the patient was first admitted, he wasn't terribly sick. He had the back problem. If the back lesion had been caused by brucellosis, the blood agglutination test should have been positive. But I think we'll have to say that in the presence of active brucellosis, positive agglutinations aren't always present, and certainly that one negative doesn't exclude it completely.

Dr. Hardin: The two patients whom I've seen had more tenderness in the back, back pain, x-ray pictures like these that we've seen, and rather high Brucella agglutinations.

Dr. Smith: Dr. Borts has a list of 555 culture-proved brucellosis patients, and I believe that 0.2 per cent of them had negative Brucella serologies.

Dr. Bedell: That would be two out of 1,000.

SUMMARY OF NECROPSY FINDINGS

The necropsy examination disclosed the anatomic fact responsible for death to have been valvular endocarditis of the mycotic type. The instantaneous cause of death was interpreted as having been intracerebral hemorrhage of massive amount, originating from numerous septic hemorrhagic thromboses. The many arterial thrombi detailed below were shown to have propagated from mycotic emboli.

There is anatomic basis for postulating two possible portals of entry, namely, chronic obstructive bronchitis secondary to bronchial occlusion by a mural adenoma, and acute suppurative seminal vesiculitis and prostatitis. Fungi were clearly evident in the second of the above, but could not be shown in the lung.

Identification of the agent responsible for vertebral-body collapse was impossible because of the absence of any sort of characteristic tissue reaction in the collapsed-disk zone.

ANATOMICAL DIAGNOSES

Mycotic valvular endocarditis, probably an Aspergillus species, mitral and tricuspid valves

Intracerebral hemorrhage, secondary to the above, massive, right temporal lobe and pons predominantly

Septic thrombosis of arteries (bifurcation of aorta, common iliacs, splenic, superior mesenteric, pulmonary artery of right lower lobe branch)

Petechial hemorrhage, skin of abdomen and thorax

Septic infarcts of spleen and kidney, numerous

Mycotic prostatitis and seminal vesiculitis, suppurative

"Adenoma" of bronchus, lower lobe, right, with distal obstructive pneumonitis, chronic

Collapse of vertebrae, old, dorsal 6 and 7

Adhesions of pleura, left, old

Reduplication of ureter and pelvis of kidney, right.

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May 8 **Seminar in Pediatric Cardiology.** Children's Memorial Hospital, Omaha

May 8-10 **Gynecology for General Physicians.** Center for Continuation Study, University of Minnesota

May 8-10 **Louisiana State Medical Society.** Hotel Roosevelt, New Orleans

May 8-10 **Symposium on Recent Advances in Dermatology.** New York University Medical Center, New York City

May 8-12 **American College of Physicians.** American Hotel, Miami Beach, Florida

May 8-12 **American Psychiatric Association.** Morrison Hotel, Chicago

May 8-12 **General Surgery.** Cook County Graduate School of Medicine, Chicago

May 8-12 **New York State Medical Society.** Manger Hotel, Rochester

May 9-11 **Mississippi State Medical Association.** Hotel Buena Vista, Biloxi

May 10 **Long Beach Surgical Society Fourth Annual Clinic Day.** The Virginia Country Club, Long Beach, California

May 10-12 **American Association of Genito-Urinary Surgeons.** Del Monte Lodge, Pebble Beach, California

May 11-13 **American Radium Society.** Broadmoor Hotel, Colorado Springs

May 11-13 **Ear-Nose-Throat.** University of California, San Francisco

May 11-13 **Surgery for Surgeons.** Center for Continuation Study, University of Minnesota, Minneapolis

May 12-13 **Washington Academy of General Practice.** Davenport Hotel, Spokane

May 13 **Kentucky Surgical Society.** French Lick Sheraton Hotel, French Lick, Indiana

May 13-17 **New Jersey State Medical Society.** Haddon Hall, Atlantic City

May 15 **University of Illinois Medical Alumni Association Medical Seminar and Dinner.** University of Illinois Medical School and Hotel Sherman, Chicago

May 15-18 **Illinois State Medical Society.** Chicago

May 15-18 **International College of Surgeons, North American Federation.** Palmer House, Chicago

May 15-18 **Surgery.** University of Kansas Medical Center, Kansas City, Kansas

May 15-19 **Blood Vessel Surgery.** Cook County Graduate School of Medicine, Chicago

May 15-19 **Gastroenterology (American College of Physicians).** University of Pennsylvania Graduate School of Medicine, Philadelphia

May 15-19 **Proctology for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis

May 15-19 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago

May 16 **Treatment of Five Common Skin Diseases (Ninth in the Series "General Medicine and Surgery").** The Moila Temple, St. Joseph, Missouri

May 16-18 **Western Conference on Anesthesiology.** Sheraton Hotel, Portland, Oregon

May 16-20 **American College of Cardiology, Inc.** Biltmore Hotel, New York City

May 17-19 **American Association of Plastic Surgeons.** Commodore Hotel, New York City

May 18-19 **Eleventh Annual Colorado Intern-Resident Clinics.** University of Colorado Medical Center, Denver

May 18-19 **Proctology.** University of California, San Francisco

May 18-20	**American Association for the History of Medicine.** Shoreland Hotel, Chicago
May 18-20	**Medical Staff of Children's Hospital of the East Bay, Ninth Annual Clifford Swect Seminar.** Hotel Claremont, Berkeley, and Children's Hospital of East Bay
May 18-20	**Nevada Chapter American Academy of General Practice.** Riverside Hotel, Reno
May 18-20	**New Hampshire Medical Society.** Wentworth-By-the-Sea, New Castle, New Hampshire
May 18-20	**"Proctologica Latina Collegium" Third International Meeting of Colon and Ano-Rectal Surgery.** Palais du Marshan, Tangier, Morocco
May 19-20	**Gerontology.** University of California at Los Angeles
May 19-20	**Management of Trauma.** Harbor Hospital, University of California at Los Angeles
May 19-20	**Preliminary Program, Annual Clinical Conference (Chicago Ophthalmological Society).** Drake Hotel, Chicago
May 19-21	**California Heart Association Annual Meeting and Scientific Session.** Disneyland Hotel, Anaheim
May 21-25	**Annual Meeting National Tuberculosis Association, American Thoracic Society, and National Conference of Tuberculosis Workers.** Netherland Hilton Hotel, Cincinnati
May 22-24	**Annual Meeting, American Thoracic Society.** Cincinnati, Ohio
May 22-24	**Minnesota State Medical Association Annual Meeting.** St. Paul Municipal Auditorium and the St. Paul Hotel
May 22-25	**American Orthopedic Association.** The Ahwahnee Hotel, Yosemite
May 22-25	**American Urological Association, Inc.** Biltmore Hotel, Los Angeles
May 22-25	**National Tuberculosis Association.** Netherland-Hilton Hotel, Cincinnati
May 22-26	**General Practice Review.** Cook County Graduate School of Medicine, Chicago
May 22-27	**International Congress of Legal Medicine and of Social Medicine.** Vienna, Austria
May 23-24	**American Bronchoesophagological Association, Inc.** Lake Placid Club, Lake Placid, New York
May 23-25	**American Laryngological Rhinological and Otological Society, Inc.** Lake Placid Club, Lake Placid, New York
May 23-25	**Massachusetts Medical Society.** Statler Hilton, Boston
May 24	**American Gastroscopic Society.** Drake Hotel, Chicago
May 24	**Memorial Hospital of Long Beach, Third Annual Medical Staff Symposium.** New Memorial Hospital, Long Beach
May 24-27	**Alaska State Medical Association.** Sitka-Mt. Edgecumbe, Alaska
May 25-27	**American Gastroenterological Association.** Drake Hotel, Chicago
May 25-27	**Water, Salts and Steroids.** University of California at San Francisco
May 25-28	**Florida Medical Association.** Americana Hotel, Miami Beach, Florida
May 26-27	**American Otological Society, Inc.** Lake Placid Club, Lake Placid, New York
May 26-27	**Common Emergencies in Clinical Practice.** University of California at Los Angeles
May 29-31	**American Gynecological Society.** The Broadmoor, Colorado Springs, Colorado
May 31-June 2	**Canadian Federation of Biological Societies (Physiological, Anatomists, Pharmacological, Biochemical).** Ontario Agricultural College, Guelph, Ontario, Canada
June 1-3	**Office Psychotherapy for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis
June 1-3	**Physical Medicine and Rehabilitation for the Clinician.** University of Colorado Medical Center, Denver
June 2-5	**Latin-American Congress of Physical Medicine.** Lisbon, Portugal
June 3-15	**International Medical-Surgical Meetings.** Turin, Italy
June 4-10	**Third World Congress of Psychiatry (Canadian Psychiatric Association).** McGill University, Montreal
June 5-9	**Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
June 5-16	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
June 5-17	**International Congress of Practical Medicine.** Grado, Italy
June 8	**World Symposium on Obstetrics and Gynecology.** Turin, Italy
June 8-11	**American Electroencephalographic Society.** Hotel Claridge, Atlantic City
June 9-11	**Society of Biological Psychiatry.** Hotel Claridge, Atlantic City
June 11-18	**American Society of Medical Technologists.** Olympic Hotel, Seattle, Washington
June 12-14	**American Neurological Association.** Hotel Claridge, Atlantic City
June 12-16	**Hematology.** Cook County Graduate School of Medicine, Chicago
June 12-23	**Gynecology, Office and Operative.** Cook County Graduate School of Medicine, Chicago
June 12-23	**Fractures and Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
June 12-23	**Neuromuscular Diseases of Children.** Cook County Graduate School of Medicine, Chicago
June 12-24	**European Institute of Scientific Studies for the Prevention and Treatment of Alcoholism.** Royal Institute for the Tropics, Amsterdam, Holland
June 14-17	**Eighth Annual Meeting of the Society of Nuclear Medicine.** Penn Sheraton Hotel, Pittsburgh
June 15-18	**International Congress on Life Assurance Medicine.** Lisbon, Portugal
June 16-20	**American Dermatological Association, Inc.** Castle Harbour Hotel, Tucker's Town, Bermuda
June 18-20	**Maine Medical Association.** The Samoset, Rockland
June 19-21	**Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
June 19-21	**Intermountain Pediatric Society.** Challenger Inn, Sun Valley, Idaho
June 19-21	**Obstetrics and Gynecology "Principles of Human Genetics."** University of Colorado Medical Center, Denver
June 19-23	**Advanced Electrocardiography.** Cook County Graduate School of Medicine, Chicago
June 19-23	**American Medical Technologists, Inc.** Cleveland
June 19-23	**Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago
June 21-24	**American Proctologic Society.** Pittsburgh Hilton Hotel, Pittsburgh
June 22-23	**American Geriatrics Society.** New York City
June 22-23	**American Rheumatism Association.** Hotel Roosevelt, New York City
June 22-24	**Endocrine Society.** Hotel Biltmore, New York City
June 22-24	**Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
June 22-25	**American Therapeutic Society.** Essex House, New York City
June 22-26	**The 27th Annual Meeting, American College of Chest Physicians.** Commodore Hotel, New York City
June 23-25	**American College of Angiology.** Savoy-Hilton Hotel, New York City
June 23-25	**North American Conference on Infertility (International Fertility Association).** Barbizon-Plaza Hotel, New York City
June 24	**American Academy of Tuberculosis Physicians.** Henry Hudson Hotel, New York City
June 24-25	**American Diabetes Association, Inc.** Commodore Hotel, New York City
June 25	**Association for Colon Surgery.** Barbizon-Plaza Hotel, New York City
June 25	**Society for Vascular Surgery.** Biltmore Hotel, New York City
June 25-30	**The AMA's 110th Annual Meeting, "World's Fair" of Medicine.** Coliseum, New York City
June 26-30	**American Physicians Art Association.** New York City
June 27-29	**Society for Investigative Dermatology, Inc.** Barbizon-Plaza Hotel, New York City
June 28	**American Society of Facial Plastic Surgery.** Hotel Elysee, New York City
June 28-July 1	**Idaho State Medical Association.** Sun Valley

Editorials

APPROACHING THE END OF AN ERA

According to agricultural economists at Iowa State University (Ames), this state has 300,000 fewer farmers than it had 15 years ago, and it is predicted that 20 per cent of Iowa's present farms will merge to form larger agricultural units within the next 10 years. To show that this trend is likely to proceed at an increasing rate, Professor Eber Eldridge cites what has happened in two Iowa counties. In Decatur County, in southern Iowa, 1.6 per cent of the farms disappeared between 1945 and 1950; 10.5 per cent between 1950 and 1955; and 16.2 per cent between 1955 and 1960. Clay County, in northern Iowa, lost 0.7 per cent of its farms between 1950 and 1955, and 10.4 per cent between 1955 and 1960.

In consequence of this trend, Dr. J. Carroll Bottum, of Purdue University, anticipates that during the 1960's five out of six farm boys turning 20 years of age will be unable to stay on the farm and will have to seek other fields of endeavor.

The impact of this socio-economic change—an increasing movement of population from the countryside to urban centers—will be felt most keenly by the small communities in the state. Unless they can attract industries, they too will gradually diminish.

Unquestionably, the shift in population will affect the distribution of physicians. Already, several small towns in the state are having difficulty retaining doctors or attracting physicians to serve their people. The consolidation of schools and the improvement of highways also militate against an ambitious doctor's choosing a small-town location. Thus, it is reasonable to predict that the era of the small-town doctor is rapidly coming to a close. Henceforth the larger, county-seat town, with a hospital, will be the medical center for the county.

The loss of the country doctor is sad, not only for the community but also for the practitioner. For the community it means the loss of a physician, counselor, friend, stalwart citizen and generous neighbor. For the doctor it means the end of a way of life which has no counterpart in human experience—a life dedicated to the service of his people, a life of affection, respect and honor. The country doctor, more than any other man, has found the secret of true happiness in intimate association with his people.

THE HAZARDS OF INTRAGLUTEAL INJECTION

Two recent reports have demonstrated the hazards of intragluteal injection in infants and children. Combes[1] reported serious sciatic nerve injury in nine patients resulting from the injection of antibiotics into the gluteal muscles. Gilles and French[2] reviewed 21 cases of sciatic palsy following intragluteal injection of various antibiotics. In 15 children, the palsy followed the injection of penicillin, and in five other children other antibiotics had been given. In the opinion of the authors, the injury was produced by the direct injection of neurotoxic material into or near the sciatic nerve. The buttock of the infant—especially the premature infant—is too small to permit injection with safety. In a struggling child, the hazard of injecting the sciatic nerve is very real.

Among the nine cases reported by Combes, foot drop, sensory loss and loss of sweating in the affected area occurred promptly. Recovery was disappointing in all but one patient. Of the 21 patients on whom Gilles and French reported, 20 infant patients had conspicuous foot drop, 11 showed calf weakness, and 12 had varying degrees of sensory loss. Of the 18 children who had adequate follow-up, six recovered completely within periods ranging from 24 hours to 13 months; four showed no improvement; and eight showed partial recovery. One patient with anesthesia over the heel required skin grafting on two occasions for ulcer of the heel. Nine of the children showed varying degrees of impairment of pedal growth.

It is recommended that the buttock be abandoned as a site of injection in infants and children. The lateral aspect of the thigh at the junction of the middle and lower thirds is a preferable site. Injection into the vastus externus muscle in this location is preferred because there are no underlying neurovascular structures which might be injured. In children, injection in the area near the hip joint may result in damage to the hip joint.

For the protection of infants and children, and to avoid professional liability, the practice of intragluteal injection should be abandoned.

REFERENCES

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2. Gilles, F. H., and French, J. H.: Postinjection sciatic nerve palsies in infants and children. J. Pediatrics, **58**:195-204, (Feb.) 1961.

IDIOPATHIC SCOLIOSIS

Idiopathic scoliosis is a difficult and perplexing condition which presents numerous intriguing questions. Among these problems, the age of onset is of particular interest and significance.

In this country, idiopathic scoliosis is rarely seen in patients under 10 to 12 years of age, and is considered a disease of the rapidly-growing adolescent. Ponseti and Shepard,[1] in reporting their excellent experimental study, have said that "a better name for idiopathic scoliosis would be adolescent scoliosis. Rare cases of scoliosis are seen in children: the deformity usually starts before the age of three years and may progress to severe deformity. We assume that in infantile scoliosis there is some underlying disturbance in the cartilage but to a more severe degree." Moe[2] in an analysis of 151 patients with idiopathic scoliosis reported seven children in the 9 to 11 year age group at the time of spinal fusion, but none in younger age groups.

Quite in contrast to the experience in this country, J. I. P. James,[3] of London, reported 134 patients with thoracic idiopathic scoliosis, a surprising number of them being in the younger age groups. In discussing this condition, James declared, "It is in thoracic scoliosis that consideration of the age of onset is most important. In many patients thoracic scoliosis commences early, and the earlier it begins, the worse the prognosis." He classified his patients into three groups depending upon the age of onset: adolescent, ages 10-17, 66 cases; juvenile, ages 5 to 8, 16 cases; infantile, under 3 years of age, 52 cases.

This London orthopedist reported that in the adolescent age group, 82 per cent of the patients were girls and 18 per cent boys. That is comparable to the experience in this country. In his group, the convexity of the curve was to the right in 90 per cent of the patients. The degree of curvature was mild in 40 per cent, severe in 33 per cent, and very severe in 24 per cent. The juvenile group of patients followed about the same pattern as the adolescent group. Among the children in the infantile group, the disease predominated in boys (56 per cent); the curvature was to the left in 90 per cent of the patients; in nine children, all under the age of two years, the curvature was less than 20 degrees and in all cases disappeared spontaneously; and in the 43 cases the curve was mild in 21, severe in 12, and very severe in 10.

In a discussion of infantile idiopathic scoliosis, James says: "These and other features so separate them from other thoracic scolioses as to leave small doubt that this is a distinct pattern. There is much evidence to suggest that it is in no way different from idiopathic scoliosis of later years. No previous suggestion has been found in the literature that an infantile group of idiopathic scoliosis exists but exclusion of all cases with visible bony abnormality leaves this remarkably homogeneous group."

Several intriguing questions present themselves. Why is infantile idiopathic scoliosis rare in this country and apparently not uncommon in England? Why does the disease occur in girls during adolescence, but mostly in boys in infancy? Why is the curve to the right in the adolescent girl, and to the left in the little boy? Perhaps when these questions can be resolved, the etiology of idiopathic scoliosis will be clarified.

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2. Moe, J. H.: Critical analysis of methods of fusion for scoliosis; evaluation in 266 patients. J. Bone & Joint Surg., **40A**:529-554, (June) 1958.
3. James, J. I. P.: Idiopathic scoliosis: prognosis, diagnosis and operative indications related to curve patterns and age at onset. J. Bone & Joint Surg., **36B**:36-59, (Feb.) 1954.

IOWANS WANT AID TO BE BASED ON NEED

The result of a state-wide Iowa poll on the subject of federal aid to the aged was recently published by THE DES MOINES REGISTER. The poll revealed that 68 per cent of Iowans were in favor of some form of government medical aid for the aged, but 74 per cent felt that such a program should be restricted to those individuals who cannot afford to buy their own health insurance. This is a definite indication that a great majority of Iowans do not favor medical aid through Social Security.

The poll showed very little difference of opinion among city, town and farm residents, although farmers generally showed less interest in government aid programs. People in the older age group were almost as strongly against the Social Security tie-in as were the younger people. Seventy-one per cent of those over 65 years of age maintained that a program of government aid should be based on need.

It is gratifying to members of the medical profession in Iowa to know the public agrees with them that implementation of the Kerr-Mills Act is preferable to any system that would provide government care to many individuals who are fully capable of taking care of themselves. This is in keeping with the spirit which is America. Self-determination and self-reliance are a part of our way of life!

DEATHS

Dr. Ruth Wolcott, 61, a Spirit Lake physician, died at her home Tuesday, March 21. Death was attributed to a heart attack. Dr. Wolcott was a graduate of SUI and for four years following her internship, she practiced medicine in China. She served as secretary-treasurer of the Dickinson County Medical Association for several years and just last year resigned from the Iowa State Board of Health.

Letter to the Editor

Dear Sir:

The April issue of the JOURNAL contains an editorial discussing cholesterol and atherosclerosis. The statements made should be considered an individual attitude rather than an expression of general scientific opinion.

Enthusiasm for a specific drug is frequently justified but may influence observations of this kind. The American Heart Association has just published a highly authoritative summary of opinions derived from extensive research and highly critical discussions. The influence of fat in the diet both in terms of quantity and type is apparently significant in the production of atherosclerosis. To most of us it appears logical to alter the diet sensibly rather than to persist with injudicious eating with the fond hope that our errors can be erased by the fertile productivity of the drug house.

Yours very truly
HAROLD MARGULIES, M.D.

600 Des Moines Bldg.
Des Moines 9, Iowa

AMA CONFERENCE ON DISASTER MEDICAL CARE

At the Ninth Annual Conference on Disaster Medical Care, scheduled to take place at the Statler-Hilton Hotel, New York City, on Saturday, June 24, the United States Air Force Medical Service will develop the theme "Defense Training for All—A Resource for National Defense." The program will be sponsored by the AMA Council on National Security.

The morning session will include discussions on Nuclear War and Your Community, The Value of Training and Exercises, Transportation of the Injured, and Communications. A symposium entitled "Organizing Community Resources" will portray the civil defense plans and activities of a local mayor, police and fire chiefs, professional health representatives and other local leaders. In the afternoon, the topics will include Radiation Fallout Detection and Monitoring; Evaluating Homes, Buildings and Other Shelters; Rudiments of Universal First-Aid Training; and Techniques for Survival—Water, Food, Clothing and Shelter Improvisations.

There will also be presentations on Behavioral Patterns in Disaster; Legal Obligations; Public Laws; Martial Law; Moral Obligations in Disaster; and Defense Planning—A Corporate Effort for Survival.

NINE HUNDRED CALORIES

Our overfed society demands an easy way to reduce. It asks to be treated with some special food or medicine, not given a lecture on dietary temperance or exercise. It is willing to pay millions of dollars in the belief that formula diets provide a radically new approach to weight control.

Fortunately for the public health, formula diets are not radically new. Physicians have used liquid diets in the treatment of disease since at least the time of Hippocrates, and more recently have employed nutrient mixtures for complete feeding of infants.

Our studies of overweight patients have led us to believe, in agreement with other observers, that obesity is a condition of multiple causes. Most striking is the relatively small group that might be said to have metabolic obesity; these individuals often are markedly overweight (twice normal or more), give a history of repeated serious efforts to reduce (followed in each instance by a prompt return of the fat), show a tendency to become lethargic and to have a subnormal metabolic rate when reduced (even though the body weight is still above normal), and possibly give a history suggesting change in endocrine state (such as the development of marked obesity after pregnancy or menopause). The essential feature identifying this group is that they remain obese despite conscientious efforts to limit calories. For them the physician has no fundamental cure. He can help them with another reducing diet to improve their appearance or attempt drastic reduction to deal with complicating diabetes and vascular disease. He can follow the metabolic rates of these patients while they are on low calorie diets, observe their physical performance and general health, and be prepared to stop the diet if metabolism seems unduly depressed. In the initial phase of treatment he might find formula diets helpful; they permit him to select a nutrient mixture and a calorie level without the ambiguity of diet-kitchen calculations. But he must plan for an indefinite time of treatment: three to six months of reduction followed by a lifetime of help in the dietary struggle.

A far larger group of overweights suffer from overeating and sedentary habits. These people provide the mass market for packaged diets, characteristically preferring to buy an expensive prepared mixture rather than make the effort required to stir up a milk shake at home. They diet in spurts lasting a few days or use formula feedings as substitutes for occasional meals. For them, the formula feedings can have almost any composition without hazard; it is quite unnecessary to load their formulas with excess vitamins and prepare a special mixture of protein, carbohydrate and fat. The formula used in this manner provides only a fraction of the total diet—a small fraction since it is taken to reduce total calories. People

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ARISTOCORT Triamcinolone has long since proved its *unsurpassed efficacy and relative safety* in treating allergic respiratory disorders, including bronchial asthma. Clinical evidence has now shown that ARISTOCORT is also highly valuable for "special-problem" patients—asthmatic and others—who, because of certain complications, were hitherto considered poor candidates for corticosteroids.

for example:

PATIENTS WITH IMPENDING CARDIAC DECOMPENSATION

In contrast to most of its congeners, ARISTOCORT is not contraindicated when edema is present or when cardiac decompensation impends.[1]

PATIENTS WITH EMOTIONAL AND NERVOUS DISORDERS

Triamcinolone did not produce psychic disturbances or insomnia.[2]

PATIENTS WHOSE APPETITES SHOULD NOT BE STIMULATED

Among patients treated with ARISTOCORT, there was less appetite stimulation, especially in those who had previously gained weight on long-term therapy with other steroids.[3]

PATIENTS WITH HYPERTENSION

There was no blood pressure increase in any patient treated for bronchial asthma, and in some, blood pressure fell. Of these, three had been hypertensive.[4]

References:

1. McGavack, T. H.; Kao, K. Y. T.; Leake, D. A.; Bauer, H. G., and Berger, H. E.: *Am. J. M. Sc.* 236:720 (Dec.) 1958.
2. McGavack, T. H.: *Nebraska M. J.* 44:377 (Aug.) 1959.
3. Friedlaender, S., and Friedlaender, A. S.: *Antibiotic Med. & Clin. Ther.* 5:315 (May) 1958.
4. Sherwood, H., and Cooke, R. A.: *J. Allergy* 28:97 (March) 1957.

Precautions: Collateral hormonal effects generally associated with corticosteroids may be induced. These include Cushingoid manifestations and muscle weakness. However, sodium and potassium retention, edema, weight gain, psychic aberration and hypertension are exceedingly rare. In the treatment of allergic respiratory disorders, dosage should be individualized and kept at the lowest level needed to control symptoms. Dosage should not exceed 36 mg. daily without potassium supplementation. Drug should not be withdrawn abruptly. Contraindicated in herpes simplex and chicken pox.

Supplied: Scored tablets—1 mg. (yellow); 2 mg. (pink); 4 mg. (white); 16 mg. (white). Also available—syrup, parenteral and various topical forms.

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who owe their obesity to bad eating habits can expect no long-term benefit from formula diet, nor are they likely to be harmed. For them, a formula serves only as a low-calorie TV dinner.

Granting that formula diets have legitimate uses in medical treatment and that they are harmless to the casual dieter, should they be approved for general distribution? The answer, in short, is that the medical writers and the commercial formula makers are doing essentially the same thing: giving the public a way to limit calories. The writers sell the consumer a recipe, while the formula makers sell him a food mixture.

There is a more serious aspect of the problem: the self-deception involved in trifling with diet. The cure for intemperance is temperance, not a crash diet. The prevention of muscular atrophy and the deterioration of vascular function associated with disuse requires regular exercise, not a packaged formula. Better than any other group, we physicians understand these elementary facts and, if reason guides behavior, should act on them. Specialists in nutrition may argue the relative importance of various components in the diet, details such as the optimal blend of fatty acids for the child or adult, but these technicalities must not be allowed to obscure the unquestioned merit of moderation in diet and the regular use of the muscles. Historically, nations have responded to affluence with idleness and overeating. Our society is doing the same. Despite scientific advances in physiology and metabolism, modern man has not progressed beyond the imperial Romans in self-control. For this failure, physicians must share the blame. To put the matter bluntly, we have not insisted on the hard necessities of self-control. As the teachers of hygiene, we have not even applied the rules of dietary restraint and exercise to ourselves with any inspiring success.

Strict formula diets involve some minor problems. The lack of residue and of food input causes a reduction of stool volume, which should be explained in advance to the patient. If the patient persists in the diet for a month or so, he usually establishes a new bowel habit without laxatives, producing a scant stool every one to three days. The teeth and gums should have special attention with patients on a completely liquid diet, since the natural cleansing and circulation-promoting actions of chewing have been eliminated. Careful brushing of teeth with massage of the gums is indicated. Flavors in the formula are likely to become objectionable in exclusive formula dieting, although they may improve acceptance for occasional use. Few people will take a strongly flavored drink as the sole food for several months.

The social inconvenience of formula dieting should not be minimized. Those of us who have tested these diets on ourselves, and the clinic patients who have attempted strict formula dieting outside of the metabolic ward, have rediscovered the profound importance of the common meal. Hardly anyone has persisted with strict formula dieting for more than a few weeks at home; on the metabolic ward with other formula patients, most of our subjects have been willing to accept the restriction for several months.

To sum up: formula dieting is not inherently dangerous. However, liquid mixtures do not have the magic properties that allow sedentary and overfed people to lose weight easily and keep it off permanently. Used as an occasional feeding to replace some regular meals, formula feedings are harmless but no more effective than feeding the same number of calories as plain milk, as a serving of fruit, as tea and honey, or as any one of countless other simple foods.

—Vincent P. Dole, M.D. (Condensed from an editorial in NEW YORK J. MED., **61**:1234-1236 (Apr. 15, '61)

U. S. CHAMBER OF COMMERCE PROGRAM IN OMAHA

Over 1,600 business and professional men representing 60 communities in eight states attended a politico-economic symposium in Omaha on March 6. The Iowa State Medical Society was represented by Dr. Otto N. Glesne, Fort Dodge, president-elect, and Mr. Donald L. Taylor, Des Moines, executive director. Also, Dr. Oscar Alden, Red Oak, and Dr. L. V. Larsen, Harlan, were in attendance.

The national president of the Chamber of Commerce, the sponsoring organization, was the luncheon speaker and also delivered the closing remarks. All of the panelists are expert in their fields and most of them are directly associated with the headquarters office of the National Chamber. The topics discussed included educational needs, health care for the elderly, unemployment and the role of unemployment compensation, the minimum wage, urban renewal, tax reform, defense and space spending, balance of payments, and the power of unions.

HEALTH CARE FOR THE AGED

One of the first questions posed was: "Is the problem of health care of the aged real or political?" The panelist pointed out that in fact it is chiefly political. One survey that is being widely used to promote a complete federal program alleges that incomes of most oldsters are less than $1,000 per year. The panelist pointed out that the survey included women over 65 who are not, and perhaps never were, employed.

Conference participants were urged to express opposition to the King-Anderson bills. A Chamber spokesman said, "The panic button has been pushed for the passage of these administration bills" before it has been shown whether the states will succeed in establishing proper legislation to

enable them to participate in the Kerr-Mills program. He proposed: (1) opposition to the passage of the King-Anderson bills, and (2) promotion of passage of the Kerr-Mills enabling legislation in all states.

URBAN RENEWAL

The National Chamber believes urban renewal can and should be accomplished without the use of federal funds. An Erie, Penna., renewal project was cited as proof that if a community has the requisite initiative and desire, it can accomplish necessary improvements without federal assistance.

The Chamber opposes a present move to create a new federal department to concern itself with depressed areas. Senator Paul Douglas (D., Ill.) has introduced a bill (SF1) that would provide $394 million to aid depressed areas, including appropriations for new buildings while many useful ones stand vacant. In connection with the Douglas Bill, it was mentioned that attempts are being made to utilize "back door" financing which permits funds to be taken directly from the U. S. Treasury without study or consideration by House or Senate appropriation committees. In this session, $33 billion has been authorized in this fashion.

AID TO EDUCATION

If there were full and complete use of state and local facilities and funds, federal aid to education would be unnecessary. It was reported at the Omaha meeting that Iowa has the highest school building cost per capita of any state in the Union, and one of the lowest teacher-salary schedules. This was called an indication of inefficiency.

LABOR ISSUES

The U. S. Chamber of Commerce thinks that unemployment is not so serious as has been reported, and that the measures designed to alleviate its effects won't help much. There is a high percentage of unskilled laborers among the unemployed, and the mere creation of jobs requiring skills won't help them. Lengthening unemployment benefits will lessen the men's incentive to get back to work. Increasing the minimum wage would create additional unemployment and/or increase the cost of producing goods. The highest rates of unemployment are in the areas of highest pay scales.

Summarizing the morning session, the moderator offered the following comments: The influence of voters can make the difference. The Landrum-Griffin Bill became law in spite of a labor-dominated Congress. This can happen on other important legislative issues if people will become better informed and will communicate their views to their Congressmen.

TAX REFORMS

The first subject discussed by the afternoon panel was tax reform. The U. S. Chamber is studying various methods by which reduction in tax rates could be accomplished. It proposes the introduction of incentive schedules and the application of a modern concept of depreciation. It believes that depreciation schedules should conform more nearly to true obsolescence. Under some circumstances, a piece of equipment can become obsolete while it is still practically new.

On the question of tax relief for small businesses, it is the Chamber's opinion that such a reform cannot be achieved separately but must be included in an overall tax reform. It feels that great assistance can be given to small businesses through improving depreciation schedules. Likewise, the Chamber is convinced that tax reform and control of governmental spending must be achieved simultaneously.

The 1961 federal budget is $87 billion, of which $22 billion is earmarked for welfare programs. Deficit spending is the direct result of too much reliance on the federal government.

In a discussion of the operation of the postal service, it was pointed out that the federal government loses $3 million daily on the mails. Since World War II, the national debt has increased $15.5 billion, of which the postal loss has been $8.3 billion.

On the topic of national defense, the audience was told that an allied soldier abroad can be maintained for $700 per year, but to finance one U. S. soldier abroad costs over $4,000. The defense budget includes 10-20 per cent of waste because of inefficiency in buying, storing, duplication, etc.

PATENT RIGHTS

A bill has been introduced in Congress which would give the government full title to all inventions in which it had invested as little as $1.00. Under the present law, the government has the use of patents on a royalty-free basis if it has participated in the cost of the original invention. It is the opinion of the U. S. Chamber that the proposal, if enacted, would stifle all incentive of private industry to develop new inventions.

UNION POWER

The U. S. Chamber favors collective bargaining, but is unalterably opposed to mass picketing, violence and secondary boycotts.

It believes that labor should be made subject to the provisions of the antitrust laws.

POLITICAL COMPLEXION OF THE U. S. CHAMBER OF COMMERCE

The president of the U. S. Chamber pointed out at the Omaha meeting that some of the panel members were Republicans and some were Democrats,

and that of the last 10 presidents of the organization, seven have been Democrats, two have been Republicans, and one has been an independent. The Chamber is non-partisan, and its principal interest is good government for the U. S., whether it be Democratic or Republican.

The president of the U. S. Chamber urged local chambers of commerce to organize political action committees, and reported that of the 3,000 local chambers now in existence, only 1,000 have already done so. He explained that these political action committees promote three programs: (1) encouraging people to express their views to their Congressmen; (2) equipping people to be effective in the work of the political party of their choice; and (3) aiding business and community leaders in developing better understanding of our competitive enterprise system.

The Chamber recommends that, before a state seeks or accepts federal assistance, it should make sure that the request for funds meets these tests: (1) Will the federal funds, in this instance, stimulate individual initiative? (2) Will they promote a dynamic free-enterprise system? (3) Will they promote and encourage voluntary leadership? (4) Will they stimulate and encourage state and local action?

THE FUNCTIONS OF THE U. S. CHAMBER OF COMMERCE

The U. S. Chamber of Commerce undertakes to (1) gather facts on important issues; (2) establish sound policy in the interests of preserving states' rights; (3) assume responsibility for action; (4) provide services as necessary to implement the aforementioned.

FORENSIC PATHOLOGY

A medical-legal institute on the function of the pathologist in criminal cases will be conducted at the Division for Continuing Education of the University of Kansas City on May 19 and 20. Doctors, lawyers, medical examiners and law-enforcement personnel will find a great deal to interest them in the program that will be presented.

The participants will be Russell S. Fisher, M.D., chief medical examiner for the State of Maryland; Mr. Joseph T. Powers, senior trial deputy, Office of the District Attorney for Los Angeles County; and Judge Victor H. Blanc, Court of Common Pleas, Philadelphia.

The program will include methods of investigation and preparation for trial of actual homicide cases, a mock trial designed to portray the pathologist as a witness, and a panel discussion on the role of the pathologist in the investigation and trial of criminal cases other than homicide.

For further information, address Mr. Duane R. Nedrud, assistant professor of law, University of Kansas City, 5100 Rockhill Road, Kansas City, Missouri.

ILLINOIS MEDICAL SOCIETY'S ANNUAL MEETING

An attendance of 2,000 physicians and 1,300 guests is expected at the annual meeting of the Illinois State Medical Society, at the Hotel Sherman, Chicago, May 14-18. The House of Delegates will meet on Sunday evening and on Tuesday and Thursday; the scientific program will last from Monday through Thursday. Besides a general assembly, there will be sectional meetings on allergy, anesthesiology, cardiovascular, dermatology, EENT, medicine, obstetrics and gynecology, pathology, pediatrics, preventive medicine, radiology and surgery.

The guest speakers will include John B. Reckles, psychiatrist, Duke University; Lt. Col. Charles A. Berry, USAF, aerospace medicine; John Rock, M.D., gynecologist, Harvard University; Robert W. Virtue, M.D., anesthesiologist, Denver; Carl E. Arbesman, M.D., allergist, Buffalo; John R. Haserick, M.D., dermatologist, Cleveland; James H. Williams, M.D., obstetrician and gynecologist, Columbus; Robert L. Jackson, M.D., pediatrician, Columbia, Missouri; James G. Janney, Jr., M.D., internist, St. Louis; Walter P. Blount, M.D., orthopedist, Milwaukee; and Robert Kugel, M.D., pediatrician, Iowa City.

For further information, address Mr. Robert L. Richards, executive administrator, Illinois State Medical Society, 360 North Michigan Avenue, Chicago 1.

ROCKY MOUNTAIN CANCER CONFERENCE

The Fifteenth Annual Rocky Mountain Cancer Conference will be held at Denver's completely air-conditioned Brown Palace West, July 12 and 13, and will feature panel discussions on "Detect Cancer in Time!—Procedures, Problems and Solutions," and "Neoplasms of the Female Genital Tract."

Presidents of both the American Cancer Society and the AMA will participate in the two-day program. Application has been made for A.A.G.P. accreditation for the Conference.

Speakers on the scientific program will include Ulrich R. Bryner, M.D., Salt Lake City; Vincent P. Collins, M.D., Houston; William Dock, M.D., Brooklyn; Manuel E. Lichtenstein, M.D., Chicago; John R. McDonald, M.D., Detroit; and John A. Wall, M.D., Houston. Morning sessions both days will be devoted to panel discussions, and they will be followed by luncheons with speakers. Individual papers will be delivered at the afternoon sessions.

The Rocky Mountain Cancer Conference, held annually in Denver, is co-sponsored by the Colorado Division of the American Cancer Society and the Colorado State Medical Society.

Further information may be obtained by writing to the Rocky Mountain Cancer Conference, 835 Republic Building, Denver 2.

ISMS COMMITTEE ACTIVITIES

TESTING FOR PHENYLKETONURIA

The ISMS Subcommittee on Maternal and Child Health considered a state-wide phenylketonuria case-finding program at its meeting on February 15, 1961. The program is as follows:

I. Case Finding
   A. Appropriate urine tests (10 per cent ferric chloride, Phenistix or dinitrophenylhydrazine) should be carried out for all infants under six months of age on each occasion that they are seen by medical personnel, whether in the private office of a physician or in a child health clinic.
   B. Appropriate urine tests should be used for all older children, regardless of symptoms, on at least one occasion.
   C. All children in special classes for the mentally retarded should be given a screening test, under medical supervision.
   D. Siblings and cousins of known cases of phenylketonuria should be carefully checked by appropriate urine screening tests.
   E. Other high-risk groups such as children with convulsive disorders or eczema should also be especially scrutinized by means of urine screening tests.

II. Confirmation of Diagnosis
   All children with a positive urine test should have a confirmatory blood phenylalanine test. This test can be provided free of charge at the laboratory of the Child Development Clinic, University Hospitals, Iowa City.

III. Management
   All children detected under the age of three should be put on the low-phenylalanine diet. Children over three should be individualized, depending upon other symptomatology. All children placed on the low-phenylalanine diet should be followed with blood phenylalanine levels at weekly intervals until the level is near normal. Thereafter, they should be followed at least every two or three months.

One of the Subcommittee members reported receiving communications from Drs. Robert Kugel and John MacQueen, of the S.U.I. College of Medicine, relative to state-wide testing of children for phenylketonuria. They had said, in those letters, that:

1. They have the laboratory facilities and are willing to test blood samples of all children whose urine tests positive for phenylketonuria.
2. Federal money can become available to the Crippled Children's Program at S.U.I. for use in the detection of children with phenylketonuria, and money can be secured from the same source for the assistance of families in which there are children with the disease (i.e., in getting a special type of milk product which is quite expensive).
3. However, before money can be obtained from the federal government, some type of state program must be initiated.

After discussing the matter, the Subcommittee adopted the following motion:

"The Subcommittee on Maternal and Child Health approves the suggested program for state-wide case-finding of phenylketonuria *and recommends that the machinery for carrying it out be established by the individual county medical societies.* Also, when this recommendation comes before the ISMS Executive Council, Dr. Robert Kugel, of the S.U.I. College of Medicine, should be invited to present and explain the program."

SCHOOL HEALTH COMMITTEE

At a previous meeting, the ISMS Subcommittee on Maternal and Child Health had made preliminary plans for a central school-health committee to be composed of representatives of the medical, dental, nursing and teaching professions. Originally, this committee was to consist of three doctors, two dentists, two nurses and seven school representatives, but it was recommended that smaller numbers should be named, at least at the beginning. Thus, the members were set at three doctors, one dentist, two school nurses, two school superintendents and two members of the State Board of Education. The chairman appointed Dr. C. P. Phillips, of Muscatine, to be the temporary chairman, and Drs. Madelene Donnelly, of Des Moines, and Mary Pucci Couchman, of Mt. Pleasant, to be the other two medical representatives. A school health card was to be the first item of business for the new interprofessional group to consider.

REGIONAL MATERNAL AND CHILD HEALTH CONFERENCE

In speaking of the Fifth Illinois Congress on Maternal and Child Health, which she had attended in Springfield on February 8-10, Dr. Donnelly said that Illinois wants to get surrounding states to cooperate in holding two- or three-state meetings in coming years. She said that about 1,500 people—physicians, nurses, social workers, etc.—attended this year's meeting in Springfield, and that Illinois has hired a permanent secretary to handle the programs.

Dispensing Physicians and Clinic Pharmacies

The following is a statement by the Iowa Pharmaceutical Association, adapted from one that was written by Mr. Henry Moon, executive secretary of the Minnesota State Pharmaceutical Association and published in the October, 1960, issue of MINNESOTA MEDICINE. *It should not be assumed to represent the policy of the Iowa State Medical Society or to reflect the opinions of a majority of its members.*

Interprofessional relations are actively cultivated in Iowa. There is real interaction that has benefited all of the professions, agencies and institutions in the health field, and above all, has benefited the citizens of the state.

In any community, medicine, public health, health education, dentistry, pharmacy, hospital administration, nursing, veterinary medicine—all combine to produce the over-all pattern of health services.

In Iowa, these groups have worked together toward common goals, while at the same time recognizing that each has a distinct and well-defined role in the total scheme of health services. Thus the people of the state have been provided the best in health care.

The value of interprofessional relations has been well demonstrated by a long-standing alliance between the Iowa State Medical Society and the Iowa Pharmaceutical Association. For example, the two professions jointly developed and established the "Code of Understanding" which serves as a guide for physicians and pharmacies in their interrelated practices, suggests rules of conduct for their respective members, and recognizes that the two professions are interdependent in their service to the patient. The "Code of Understanding" has been recognized nationally as an outstanding contribution to improved relations between medicine and pharmacy. Many other state medical societies and pharmaceutical associations have adopted it as a guide to better relationships. A further example of the benefits produced by this "code" can be found in the continued cooperation of physicians and pharmacists in providing the personal health services so essential to the complete health picture of the individual within a given community. Medicine and pharmacy continue to work together and are unified in their action to oppose promiscuous self-diagnosis and self-medication.

Iowa pharmacy has allied itself with medicine in the fight to preserve the traditional system of voluntary health care. Perhaps the appearance of Mr. A. Phil Coontz, past-president of the Iowa Pharmaceutical Association before the Committee on Ways and Means of the House of Representatives in opposition to HR4700, the Forand Bill, was the most significant. Mr. Coontz was the only representative of a state pharmaceutical association privileged to be heard. Pharmacy and the Iowa Pharmaceutical Association will continue to oppose Forand-type legislation and to support medicine in its endeavors to obtain medical-care legislation which insures the rights of the individual.

In the present campaign for a medical and remedial assistance program and a new Medical Assistance for the Aged program, pharmacy is working with medicine in a continued effort to insure that such programs are administered on a sound medical basis, with the health care of the individual the primary concern.

It is only through close interprofessional relationships and unity of purpose between the members of the medical health team that such benefits to the professions and the people of the state can be obtained.

At this time, the threats to our traditional pattern of voluntary health care and the freedom of the health professions are more numerous and graver than ever before. Now more than ever, it seems essential that medicine and pharmacy, and indeed all of the health professions, should present a united front.

It would, therefore, be regrettable if a situation developed which might in any way weaken the bonds of loyalty and understanding that have linked medicine and pharmacy. Pharmacists and many physicians have recently felt concern over developments which might conceivably lead to such a situation.

We are referring to the dispensing of drugs by physicians and the establishment of physician-owned pharmacies within medical clinics. The answer to whether or not these practices are desirable must, of course, be left to the medical profession. As spokesmen for pharmacy, we merely wish to raise certain questions that we believe physicians will want to consider in arriving at the answer.

The physicians engaging in these enterprises give various reasons for doing so. One of the commonest is the expressed desire to provide drugs to their patients at lower cost. This objective presumably reflects two assumptions: (1) that the price of drugs, when dispensed by the community pharmacy, is excessively high, and (2) that the dispensing physician or clinic pharmacy can provide service and drugs of the same quality as the community pharmacy at a lower price.

SIGNIFICANT REDUCTIONS IN DRUG PRICES ARE IMPOSSIBLE

The question of whether prescription prices are too high is a deeply involved and controversial

one. However, here are some interesting figures that were recently published in the AMA NEWS.

"The nation's most extensive prescription price survey shows that more than 60 per cent of the prescriptions filled in 23 different sections of the country during a two-month period in 1959 were priced at $3.00 or less; more than one-third were priced at $2.00 or less; 8.6 per cent at more than $6.00; and 1.7 per cent at more than $10.00."

These figures and all the other authoritative information available indicate that the percentage of prescriptions costing more than $3.00 is very small.

According to Dr. Austin Smith, president of the Pharmaceutical Manufacturers Association and chief spokesman for the drug industry at the Kefauver investigation of prescription prices, the people who complain about drug prices can be divided into two groups: those who don't want to pay and those who can't pay. The first group, he says, is made up of those individuals who object to paying for any type of health service—doctor bills and hospital bills, as well as drug bills. Even if it were possible to make a sharp reduction in drug prices, this group would continue to complain.

The second group is made up of those individuals who are simply unable to pay for prescriptions or other medical services at *any* price—the medically indigent. The reduction of drug prices by half or three-quarters would do little or nothing to alleviate their plight. The solution to this problem, says Dr. Smith, is in the final analysis a socioeconomic matter which should appropriately be left to the cooperative efforts of the health professions and the public welfare agencies.

Even if we were to assume that the dispensing physician does sell the same prescription drug for less than the pharmacist, can he appease the chronic complainer or help the person who simply cannot pay for drugs?

Over and above the cost of manufacturing and distributing a drug, there are two variable items which contribute to the price—the manufacturer's mark-up and the retail pharmacist's mark-up. Again a remark made by Dr. Smith is very much to the point. If all the manufacturers' profit from prescription prices were wiped out, he has observed, the problems presented by the low-income consumer and the chronically ill would remain. The saving to the consumer that would result would barely be enough to pay for his daily newspaper.

It would, therefore, follow that even if the dispensing physician or the physician operating a pharmacy within a clinic were to sell drugs at cost, he would be doing little to help those who are actually in need of help.

What about the pharmacist's retail mark-up?

One answer to this question appeared in an article on prescription prices published in LIFE. The article was decidedly unfriendly to the drug industry, it should be pointed out, and could in no way be interpreted as biased in favor of the pharmacist. Nevertheless, LIFE acknowledged that the average retail mark-up on prescriptions was scarcely adequate to meet the pharmacist's overhead. Further, the nationwide survey conducted last year by Eli Lilly & Company shows that the pharmacist's profit from drug sales averages 5.7 per cent before taxes. Obviously, this represents a very small return on the pharmacist's investment.

In Iowa, at least, even these figures seem overgenerous. Years of daily contact with pharmacists throughout the state have convinced us that most prescription departments operate on a perilously narrow margin. In fact, if pharmacists were to charge their prescription departments for all of the overhead expenses actually attributable to them, most of them would find that they were losing money on drugs.

Despite the widespread belief that prescription sales produce the major share of the pharmacist's profit, this department is only rarely self-supporting.

Pharmacists are frequently criticized for stocking a broad range of non-drug items. However, the revenue produced by this extraneous merchandise often helps support the prescription department. Without this form of "subsidization" it would be necessary to charge higher prices for drugs to maintain prescription service.

With these facts in mind, is it realistic for us to assume that the dispensing physician or the clinic pharmacy can provide the same quality of service—and more importantly, the same quality of drugs and medicines—at a lower cost than the community pharmacist? Will they, like the community pharmacy, make available the great number and variety of pharmaceuticals that enable the physician to select from thousands of individual preparations the precise medication indicated?

COMMUNITY PHARMACIES OFFER THE MAXIMUM CONVENIENCE

It is sometimes argued that dispensing by physicians or the presence of a pharmacy in a clinic offers patients greater convenience in having prescriptions filled.

It is difficult to conceive a system that offers greater convenience to the public than does the pattern of prescription service that now exists. There is a pharmacy within easy reach of virtually every individual in the state. Pharmacists in every community offer prescription service 24 hours a day—from early in the morning until late at night, Saturdays, Sundays and holidays. Many pharmacists offer free delivery service, and all are ready to respond to an emergency call at any hour.

For various reasons, many dispensing physicians and clinic pharmacists tend to favor lesser-known drugs made by small, local manufacturers. Much has been said recently about the use of so-called generic equivalents in place of brand name prepa-

rations made by well-known, reputable manufacturers.

Those who advocate the use of generic equivalents argue that their use will reduce the price of prescriptions. This could conceivably lead to a system where the physician would be deprived of the right to specify the precise medication he wants his patient to have. In writing his prescription, the physician would be restricted to using a general descriptive term, without indicating the brand name or manufacturer.

Under our present system, the manufacturer stakes his reputation and future success on every unit of medication he markets. This is an assurance of quality, purity and efficacy, not to mention the fact that the well-established manufacturer has the extensive resources and technical equipment required to exercise rigid control over the drugs he produces.

The majority of patients seeking treatment want the most reliable and efficacious medication available, regardless of variations in cost. Physicians will be the first to say that their patients do not want cut-rate health. Physicians and pharmacists alike have heard requests for a "cheaper substitute" for a certain brand-name drug. But when actually faced with a choice between a brand name and an unknown preparation, the patient will almost invariably prefer the former.

Perhaps the most serious indictment of the generic-equivalent system is the fact that it would interfere with the patient-physician relationship. Under this system the responsibility for specifying the brand the patient is to receive would be relegated to the pharmacist. In other words, the pharmacist rather than the physician would decide which brand the patient was to receive. We are sure that doctors of medicine are unwilling to abdicate this responsibility. We are sure they want to exert maximum control over the management of their patients.

COMMUNITY PHARMACIES BENEFIT MEDICAL PUBLIC RELATIONS

It goes without saying that both medicine and pharmacy have their public relations problems. In both cases, one of the major issues is cost—the so-called high cost of medical care and the so-called high cost of prescriptions. In fact, we know that these problems are serious enough to make government control a real and immediate threat to both professions.

The establishment of clinic-affiliated pharmacies tends to aggravate the problem of medical care costs. Complaints of patients bear this out—patients visiting a dispensing physician or a clinic which houses a pharmacy will generally come to identify one with the other. When it comes to paying for medical care and for a prescription drug, does the patient make a distinction between the two charges? It is more likely that in the mind of the patient the cost of the prescription will be lumped together with the cost of medical care.

Even when the patient makes the mental distinction between the cost of drugs and the cost of medical care, it is quite possible the doctor will still be the main target of any resentful feelings. And we venture to say that many people will adopt this attitude, however unjustified, without bothering to find out whether the physician has any financial interest in the pharmacy. In fact, the same attitude can be expected to develop even when the pharmacy in the clinic building is wholly owned by the pharmacist. The mere presence of the pharmacy in the clinic will tend to identify it in people's minds as a part of the clinic.

The operation of a clinic pharmacy would perhaps aggravate the problem by seeming to add a significant sum to what patients regard as their "doctor bills."

Is it not also likely that the dispensing physician and the clinic-affiliated pharmacy will tend to restrict the patients' choice? Free choice of physician is, of course, a traditional right that is to be vigorously guarded and preserved. Free choice of pharmacist is also a traditional part of our pattern of health service, as set forth in the "Code of Understanding." The dispensing physician and the clinic pharmacy do not, of course, literally deprive the patient of free choice. But in actual practice, it seems highly probable that the availability of drugs in the doctor's office or in the clinic pharmacy will create a psychological situation that will almost compel the patient to purchase his prescription drugs there.

There is another point which should be considered, since we are examining all aspects of this question. Both pharmacists and physicians are aware of the persistent and unpleasant charge that doctors and pharmacists enter into compacts for the purpose of exploiting patients. These vicious, baseless accusations insinuate that physicians prescribe unnecessarily or prescribe the more expensive drugs extensively so as to take advantage of a "kick-back" arrangement with the pharmacists.

Such charges impugn the integrity of the pharmacist as well as that of the physician. Nevertheless, we must recognize the fact that such suspicions, however groundless, exist in the minds of some of the public. Therefore, it seems altogether possible that the clinic-affiliated pharmacy may create a psychological atmosphere that will foster and perpetuate those suspicions. The mere physical proximity of the pharmacy and the clinic could, indeed, arouse suspicions where none existed before. And while completely unfounded, this factor could again serve to aggravate a problem which is already serious.

Over the years, there has been a trend among physicians to disencumber themselves of the many tasks which do not require their specialized skills and knowledge. They have shown an increasing

tendency to delegate responsibility to supporting specialists—to x-ray technicians, anesthetists, biologists, pharmaceutical manufacturers and pharmacists. In doing so, they have been able to serve more patients more effectively, thus helping to meet the unprecedented demand for medical care, despite the shortage of physicians.

SUMMARY

In these remarks, the following questions have been raised:

1. Does the dispensing physician or the clinic-affiliated pharmacy answer a need within our established scheme of health services?
2. Will they offer the same quality of drugs and medications to patients at lower prices?
3. Do they answer a need for more convenient availability of drugs?

We know that the answers that are arrived at by the majority of Iowa doctors of medicine will be consistent with the best interests of the medical profession, and with the health and welfare of the people of Iowa.

TUMORS OF THE OVARIES

A research project at S.U.I. using rats to investigate the causes of tumors of the ovaries indicates that the tumor development may be induced by abnormally high and persistent stimulation by gonadotrophin, a hormone secreted by the pituitary gland.

A paper on the subject by Emil Witschi, Ph.D., a professor of zoology, and Donald C. Johnson, Ph.D., a research assistant professor of urology, was presented in March at a seminar for science writers in St. Petersburg, and will appear shortly in CANCER RESEARCH, a monthly magazine published by the American Association for Cancer Research. The S.U.I. research project has been supported by a $4,000 grant from the American Cancer Society, which also sponsored the Florida seminar.

In the study, the skins of two rats—one a castrated male and the other a female—were united so that blood-carried hormones circulated between the two, providing a constant stimulation of the ovaries of the female by gonadotrophin from the companion rat.

The castrated rat did not use the hormone gonadotrophin produced in its body, and so transferred it to the adjoined female rat. This "step-up" in the amount of the hormone in the female rat caused the abnormally high stimulation, the researchers found. Tumors developed as a result.

Study of the composition of this hormone clearly shows that the substance normally stimulates the formation of spermatozoa, and the development and activities of the granulosa and theca cells, the characteristic envelopes of the ovarian egg.

The animal experiments at S.U.I. suggest that tumors in the human ovary originate from similar hormonal disturbances which, in women, result in menstrual disorders and persistent stimulation by the hormone.

A high percentage of ovarian tumors occur either in young girls or in women approaching the menopause. Failure of the pituitary gland to adjust the quantity of hormone secreted to the altered physiological processes in the body, the researchers think, could cause abnormally high and persistent stimulation similar to that which brought about development of tumors in their rats.

Dr. Witschi is a visiting professor at Yale University this semester. He will return to S.U.I. sometime this month.

CHEST PHYSICIANS STAGE DAY-LONG PROGRAM AT AMA

On Monday, June 26, in New York City, the AMA and the American College of Chest Physicians will cooperate in presenting a day-long program on chest diseases. June 26 is the last day of the ACCP annual meeting and the first day of the big AMA meeting.

The subjects to be covered include new approaches in the treatment of various forms of heart disease; tuberculosis in general hospitals; steroid treatment in lung diseases; modern diagnostic measures in heart disease; pulmonary diseases and the best forms of treatment for them; asthma; chronic bronchitis and emphysema; heart catheterization; recent advances in the treatment of cardiopulmonary diseases; modern treatment of angina due to stress and effort; and x-ray findings in heart and chest diseases.

The physicians who will participate in panel discussions are as follows: Henry Williams, Jr., M.D., Alvan L. Barach, M.D., Daniel Lukas, M.D., and Isadore Rosenfeld, M.D., all of New York; William Hollander, M.D., Boston; Eliot Corday, M.D., Beverly Hills; Howard Burchell, M.D., and Norman Hepper, M.D., Rochester, Minnesota; Irving J. Selikoff, M.D., Paterson, N. J.; Clarence S. Thomas, M.D., Nashville; W. Proctor Harvey, M.D., Washington, D. C.; and George E. Burch, M.D., New Orleans. Papers will be presented by David B. Boyd, M.D., Boston; Richard Overholt, M.D., Boston; John F. Briggs, M.D., St. Paul; George L. Waldbott, M.D., Detroit; Gustav J. Beck, M.D., and Hylan A. Bickerman, M.D., of New York; and Krishna Nanda, M.D., New Delhi.

In addition to the formal scientific session, the College of Chest Physicians will sponsor a new exhibit, "Physiologic and Clinical Testing of Cardiac Function" at the New York Coliseum beginning Sunday afternoon, June 25.

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

VAGINAL SURGERY, ed. by *Abraham F. Lash,* M.D., and OBSTETRIC ANESTHESIA AND ANALGESIA, ed. by *Robbert A. Hingson,* M.D. (Vol. 4, No. 1 of CLINICAL OBSTETRICS AND GYNECOLOGY). (New York, Paul B. Hoeber, Inc., 1961. $18 for a year's series of four issues).

LOSE WEIGHT AND LIVE, by *Robert P. Goldman.* (Garden City, New York, Doubleday & Co., 1961. $3.95).

MANAGEMENT OF HYPERTENSIVE DISEASES, by *Joseph C. Edwards,* M.D. (St. Louis, The C. V. Mosby Company, 1960. $15.00).

CHILDBIRTH WITH HYPNOSIS, by *William S. Kroger,* M.D., ed. by *Jules Steinberg.* (New York, Doubleday & Co., 1961. $3.95).

BOOK REVIEWS

DRUGS IN CURRENT USE, 1961, ed. by *Walter Modell,* M.D. (New York, Springer Publishing Company, Inc., 1960. $2.25).

This book is a "whittled down" version of PHYSICIANS' DESK REFERENCE TO PHARMACEUTICAL SPECIALTIES AND BIOLOGICALS. The authors state that their purpose is to provide a concise statement of the principal pharmacologic characteristics of drugs in current use; of their major uses; their physical properties; their absorption; actions, both therapeutic and toxic; mode of administration; preparations; dosage; specific antidotes against poisoning when these are available; and a capsule account of the data essential to the sensible exploitation and safe handling of a drug.

The drugs are listed in alphabetical order, and for each of them there is a short résumé, followed by the proprietary names and/or synonyms by which it is known. The discussion of each drug is very short and concise. The drugs listed are single drugs, and the combinations with which the market is being glutted are avoided.

The only advantages I see in this book are that it is small and that the discussions of drugs have been condensed into the least number of words possible. One can find essentially the same things listed in it as in a pharmacology text or in PDR, and in addition there are comments here and there to the effect that the drug under discussion is no different from such and such drugs that have been on the market for some time, or that the product under discussion has no definite advantage over such and such other products. These comparisons you will *not find* in the PDR. Therefore, I would recommend this book for those doctors who don't want to wade through masses of words to find the actions, uses, dosages and side effects of the drugs in which they are interested.

This book won't be useful to physicians who order preparations consisting of several types of medicines, for instead of looking up just one drug, they would have to look up the various individual ingredients of the mixtures.

DRUGS IN CURRENT USE won't replace a good pharmacology textbook, any more than the MERCK MANUAL will replace Cecil's TEXTBOOK OF MEDICINE or Harrison's TEXTBOOK OF MEDICINE. All of these, however, have places in the medical library.—*E. J. Hertko,* M.D.

SURGERY FOR NURSES, SEVENTH EDITION, by *James Moroney,* M.B., Ch.B., F.R.C.S. (Baltimore, The Williams & Wilkins Company, 1961. $7.50).

This book does not differ basically from the standard texts published for nurses in the United States. The contents are not oriented toward nursing care, but rather toward augmenting the nurses' understanding of surgical diseases.

It is a well-illustrated book, and the contents are presented in a well-outlined manner that lends to quick and easy reading. The volume is of little interest to the physician himself, because of its very elementary nature, but it has been well received by the nursing staff in our office.—*A. N. Smith,* M.D.

DIABETIC CARE IN PICTURES, THIRD EDITION, by *Helen Rosenthal,* B.S., and *Joseph Rosenthal,* M.D. (Philadelphia, J. B. Lippincott Company, 1960. $4.50).

We physicians are called upon to deal with patients in ever-increasing numbers, and our time with each of them is necessarily limited. Thus, we can greatly appreciate a book of this caliber that provides the diabetic patient and his relatives with an insight into the metabolic disturbances that he is experiencing.

This book deals with such subjects as "What is diabetes and its treatment?" in such terms and with such clarity as to make the subject highly interesting as well as quite clear to laymen. Its nine chapters deal with diabetic diets, insulin, insulin reactions, diabetic coma, oral drugs, blood and urine tests, and various other things such as care of the skin, personal hygiene, and personal and social factors. The book's greatest asset is its wealth of charts, graphs and pictures. This approach, the authors state, was conceived in 1918 when Frances Stern, the founder of the first food clinic in the world, developed the now accepted concepts of visual education.

The chief intentions of the authors in this edition, as in the two previous ones (1946 and 1953), have

been to help the patient understand his condition and to enable him to share responsibility for his successful treatment. I think that the book achieves these objectives to a considerable extent, and I recommend it not only to the diabetic patient and his relatives, but also to his doctor, for it covers various aspects of the care and treatment of diabetes with clarity.—*E. J. Hertko,* M.D.

INFORMATION PLEASE! FOR WOMEN ONLY, by *Alfred Dreyfus* II. (New York, The Vantage Press, Inc., 1961. $7.50).

This book has 556 pages, the last 365 of which contain charts for every day of the year (except February 29). These completely unnecessary charts provide such information as: if the last menstrual period was due on March 1, on March 8 you would be one week overdue, on March 15 you would be two weeks overdue, etc., for 40 weeks.

The rest of the books has a hodge-podge, a pot pourri, of information which might tend to confuse an already much misinformed public. If a reader is interested in such topics as syphilis, gleet, mouth-watering during pregnancy, "Does Masturbation Cause Sterility?" and the sex laws of all the states (Alaska and Hawaii not included), he might find this book to his liking.—*H. Kirby Shiffler,* M.D.

THE LIFE EXTENSION FOUNDATION GUIDE TO BETTER HEALTH, by *Harry J. Johnson,* M.D. (New York, Prentice-Hall, Inc., 1959. $).

The Life Extension Foundation has performed about 3,000,000 health examinations on employees and executives. Dr. Johnson, the author, has set forth his philosophy of well-being in this moderate-sized book. It is his feeling that most of us are living at between 50 and 75 per cent of the feeling of healthiness that we should have. He tells the reader how to improve his health by explaining about relaxation, sleep, fatigue, vitamins, alcohol, tobacco and exercise, and about preparing for the future. There is also a chapter on "How to get along with your doctor—and avoid quacks."

The whole book is written in a rather "homey" fashion by an individual who has "common sense"—by far the rarest of the senses. He tells many stories and cites examples to brighten up the reading. The style is similar to that of Dr. Alvarez.

I am against most popular books on health because they tend to make the patient a hypochondriac—more and more concerned with every little symptom. This book, however, is more of an attempt to expound a philosophy of physical happiness than to catalog various horrible disease entities. As a matter of fact, a good many of my doctor-friends would benefit from reading this book, for doctors in general take very poor care of their own health.

The book would be an excellent one for the doctor's waiting room, for a general library, or for any layman's home. The facts and ideas in it are sound and sensible, and will help anyone in his continuous "battle with civilization."—*Daniel A. Glomset,* M.D.

THE QUESTION OF FERTILITY, by *George Valensin,* M.D., tr. from the French by *Leah Suchodolski.* (New York, Doubleday & Company, 1960. $4.50).

This book, in the original French, bore the title LA FECONDATION ARTIFICIELLE ET NATURELLE DE LA FEMME, and the English title is a misnomer. The contents are a thorough and complete presentation of the subject of artificial insemination, written in an interesting and readable manner. Although the topic may be distasteful to many readers, the book can't help being stimulating reading.

The author makes a number of statements that are open to question. In other words, some things that he regards as matters of fact seem to me to lie in the realm of speculation. The chapter on religious and legal aspects of AID is particularly interesting, and the section on the ultimate steps of artificial insemination is particularly provocative.

Generally, the book is stimulating, but better left to those with a special interest in the field of artificial insemination.—*H. Kirby Shiffler,* M.D.

1960-1961 YEAR BOOK OF OBSTETRICS & GYNECOLOGY, ed. by *J. P. Greenhill,* M.D. (Chicago, The Year Book Publishers, Inc., 1960. $8.00).

Perhaps it should be explained that "1960-1961" means that this volume belongs to the Year Book Publishers' series year that began in September, 1960.

Like its predecessors, this volume was edited by Dr. Greenhill and brings together in a condensed, compact presentation the most significant of the recent publications pertaining to developments in obstetrics and gynecology. Dr. Greenhill has done an excellent job.

A glance at the table of contents reveals the scope and all-inclusiveness of this series. It serves as a wonderful reference source and provides a method for keeping abreast of current findings in the field of obstetrics and gynecology.—*H. Kirby Shiffler,* M.D.

NINE MONTHS' READING, A MEDICAL GUIDE FOR PREGNANT WOMEN, by *Robert E. Hall,* M.D. (Garden City, New York, Doubleday & Company, 1960. $2.95).

Dr. Hall has succeeded in writing a book that will give the average lay person an understanding of and some insight into modern obstetrics.

This book includes the many facets of obstetrics in which the patient should be interested, including such topics as how to select a doctor, doctors' fees and hospital rates. The book is divided into 10 chapters that take the patient through all the phases of her pregnancy, including her first visit, the development of the fetus, complications of pregnancy, and labor and delivery, both normal and abnormal, and ending with the first postpartum visit.

The glossary of obstetrical terms is particularly valuable.

It is a well-written, factual and easily-understood book, and I believe it would be a valuable asset in the office of any doctor practicing obstetrics.—*H. Kirby Shiffler,* M.D.

Iowa Chapter of the American Academy of General Practice

OKOBOJI SPRING POSTGRADUATE CONFERENCE

Sponsored by the Iowa Chapter and the Northwest Iowa Heart Council

The cool breezes of Lake Okoboji will help to attract family doctors to the three-day meeting that the Iowa Chapter is to present there, on June 22, 23 and 24. Fine sessions have been scheduled for the mornings of those three days, at which physicians may refresh their knowledge of pediatrics, neurology, psychiatry, orthopedics, obstetrics, cardiology, etc. Speakers from medical centers at Omaha, Rochester, Minneapolis, Iowa City, Madison and Des Moines will deliver interesting lectures. The presentations on Saturday are planned and sponsored by the Northwest Iowa Heart Council in cooperation with the Iowa Chapter.

The afternoons will be free for recreation and family fun, which may be vigorous water-skiing or golfing, or relaxing on the warm sands of the beach. All the facilities of the New Inn and Iowa's Great Lakes Area will be available to provide the doctors a fine time, socially and professionally. Plans are in the making for an evening of family entertainment together—movies, a cookout and what have you. Make plans now to attend this Spring Postgraduate Conference.

Following is the scientific program:

Thursday, June 22

"Meningitis in the Newborn"—M. E. Alberts, M.D., Des Moines
"Ovarian Tumors"—L. S. McGoogan, M.D., Omaha
"Surgery in the Treatment of Ischemic Cerebrovascular Disease"—Jack P. Whisnant, M.D., Rochester
"Long-Term Effectiveness and Toxicity of the Phenothiazines"—F. E. Shideman, M.D., Madison
"The Ear in General Practice"—Robert Priest, M.D., Minneapolis
"Diagnosis of Depression"—A. S. Norris, M.D., Iowa City
"Fractures in Children"—P. J. Kelly, M.D., Rochester
"Practical Observations on Blue Shield"—Earl Lowry, M.D., Des Moines

Friday, June 23

"Treatment of Depression"—Dr. Norris
"Problems in the Management of Neoplasms of Bone"—Dr. Kelly
"Tracheotomy"—Dr. Priest
"Abdominal Pain in Children"—Dr. Alberts
"Simplified Classification of Stroke Syndromes"—Dr. Whisnant
"Long-Term Effectiveness and Toxicity of the Thiozide Diuretics"—Dr. Shideman
"Abnormal Presentation"—Dr. McGoogan

Saturday, June 24

(Program Sponsored by the Northwest Iowa Heart Council)

"Cholesterol and Atherosclerosis"—J. L. Juergens, M.D., Rochester
"Management of Arteriosclerosis Obliterans"—P. J. Osmundson, M.D., Rochester
"Management of Coronary Heart Disease"—R. E. Smith, M.D., Rochester
"Management of Cerebrovascular Disease"—R. G. Siekert, M.D., Rochester
"Current Concepts and Management of Anticoagulant Therapy"—J. A. Spittel, Jr., M.D., Rochester

Twelve hours of Category I credit will be allowed for attendance at the entire conference.

Attend the

AMA ANNUAL MEETING

at the

COLISEUM

New York City

June 25-30, 1961

THE DOCTOR'S BUSINESS

Your Bank Accounts

HOWARD D. BAKER
WATERLOO

In our business, we rather frequently find clients with large accumulations of money in checking, savings, and savings or building and loan accounts. Quite often there are sound investment reasons for our recommending substantial transfers to other media. Such advice is especially well founded as regards checking accounts, which provide no yield whatsoever. Every $1,000 of excess checking-account balance costs its owner at least $40 annually in sacrificed earnings. As for savings accounts, we must determine whether an imbalance exists between the client's fixed-dollar and variable commitments before recommending transfers of large sums.

Recent embezzlements of very substantial sums by bank employees in the Midwest have highlighted another reason for limiting the funds in a bank account. This reason is simply the excess risk.

By far the most outstanding example of this sort of risk is the recent embezzlement of over $2 million by a trusted employee and stockholder of a bank in Sheldon, Iowa. This defalcation has contributed, directly or indirectly, to the complete insolvency of the bank, to the bankruptcy of one of the town's leading industries and to the threat of crippling losses to numerous persons who had over $10,000 each on deposit with that bank.

If you carry more than $10,000 in a bank account, you too may be unduly exposed to such a loss, and it will be too late after you read about the embezzlement in your local paper. If investment logic alone does not dictate limitations on your bank accounts, it is certain that safety factors do. The Federal Deposit Insurance Corporation and the Federal Savings and Loan Insurance Corporation provide full protection on bank and savings and loan accounts of *up to $10,000*. That $10,000 is *per entity*—i.e., individual, joint, partnership or corporate account.

In the case of a husband and wife, it would be possible for as much as $30,000 to be insured in any one bank, if the accounts were properly designated. The husband could have $10,000 in his name, the wife could have $10,000 in hers, and an additional $10,000 could be in a joint account. *Two* accounts in the *same name* are insured only once—for $10,000.

Beyond that $30,000 level, husband and wife should place their funds in a second bank or savings and loan organization. Above all, money should never be deposited with an institution not participating in a federal insurance program.

If you are carrying excess funds in your checking or savings accounts, you have a two-fold interest in reducing them. Both investment principles and safety reasons dictate a revision of those accounts.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

SPRING POSTGRADUATE CONFERENCE

Iowa Chapter

American Academy of General Practice

New Inn, Lake Okoboji

June 22-24, 1961

Make your reservations now with the New Inn for yourself and your family, and plan to attend.

STATE DEPARTMENT OF HEALTH

COMMISSIONER

MORBIDITY REPORT FOR MONTH OF MARCH, 1961

Disease	Mar. 1961	Feb. 1961	Mar. 1960	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	236	365	376	Jefferson, Johnson, Polk, Pottawattamie
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	654	402	166	Dubuque, Polk, Scott
Whooping cough	9	8	10	Polk
Brucellosis	15	13	22	Dubuque, Linn
Chickenpox	928	1073	516	Dubuque, Polk, Pottawattamie, Scott, Story
Meningococcic meningitis	1	0	1	Winneshiek
Mumps	788	608	461	Des Moines, Dubuque, Harrison, Polk
Poliomyelitis	0	0	0	
Infectious hepatitis	219	195	54	Boone, Lee, Polk, Pottawattamie, Scott, Woodbury
Rabies in animals	23	20	12	Story
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	32	33	66	For the state
Syphilis	89	109	84	For the state
Gonorrhea	86	114	100	For the state
Histoplasmosis	4	0	1	Appanoose, Clarke, Jefferson
Food intoxication	0	0	0	
Meningitis (type unspecified)	3	1	2	Carroll, Jefferson, Washington
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	0	Louisa
Salmonellosis	1	4	0	Polk
Tetanus	0	0	0	
Chancroid	0	1	0	
Encephalitis (type unspecified)	0	0	0	
H. influenzal meningitis	0	0	1	
Amebiasis	0	0	0	
Shigellosis	4	9	3	Chickasaw, Dallas, Muscatine, Polk
Influenza	6	17	902	Dickinson

POLIOMYELITIS PROTECTION

The Salk poliomyelitis vaccine has been in general use in the United States for a five-year period. During that time, it has definitely proved its value in preventing the greater share (80 to 85 per cent) of cases of paralytic poliomyelitis. This represents progress. However, national surveys show that many people have never had their immunizations against poliomyelitis. Many more have started their series of shots but have never finished them. Nationally, it is estimated that 38 per cent of children five years of age and younger fall into one or the other of these two groups. Also included in them are 63 per cent of the men and 48 per cent of the women between the ages of 20 and 40 years. National studies also show that almost half of the paralytic cases in 1960 were in children under five years of age, and that young adults who contracted the disease were among those most seriously paralyzed.

Further studies reveal that throughout the United States there are "islands" of unvaccinated persons, and that these may be found in both urban and rural areas. All of the above national figures apply, with little variation, to our own state of Iowa.

In 1961, the emphasis should be put upon immunizing the previously unvaccinated groups—babies under five years of age, breadwinners under 45 years of age, and "islands" of people among whom the percentage of immunized individuals is much lower than for the general public. At the same time, we must remember to maintain immunization status in those who have already completed their series of three injections.

In 1960, Iowa had six paralytic and 19 non-paralytic cases.

THE POLIOMYELITIS VACCINATION SCHEDULE FOR 1961

Although an oral vaccine has been approved, none of it will be ready for use during the spring and early summer of this year, nor will it be available in dependable amounts even during the late summer and fall. Our program of vaccine protection thus, at least through 1961, must depend upon the use of the Salk vaccine.

1. *The Basic Series.* All persons under 45 years of age should be immunized against poliomyelitis. The basic series consists of three injections: the initial injection, the second injection four to six

weeks after the first, and the third injection seven to 12 months following the second.

2. *For Babies.* Research during the past two years has shown that the vaccine may be started in babies as young as two months of age. For babies whose immunizations are started before they reach six months of age, the basic series should consist of the initial injection, a second injection a month later, a third injection about a month after the second, and a fourth injection seven to 12 months after the third.

3. *Booster Injections.* It is definitely established that a booster injection of the vaccine should be given to all persons a year after the completion of the basic series of immunizations.

4. *Subsequent Boosters.* Probably sufficient time has not elapsed so that we can be sure of the proper timing of the second routine booster. It may be from one to two years after the first booster. For the present, however, it is advised that special boosters be given (a) to persons in areas where poliomyelitis is in high incidence; (b) to pregnant women; (c) to children about to enter school; and (d) to persons traveling in areas where the sanitation is known to be poor.

GONORRHEA—A YOUTH PROBLEM

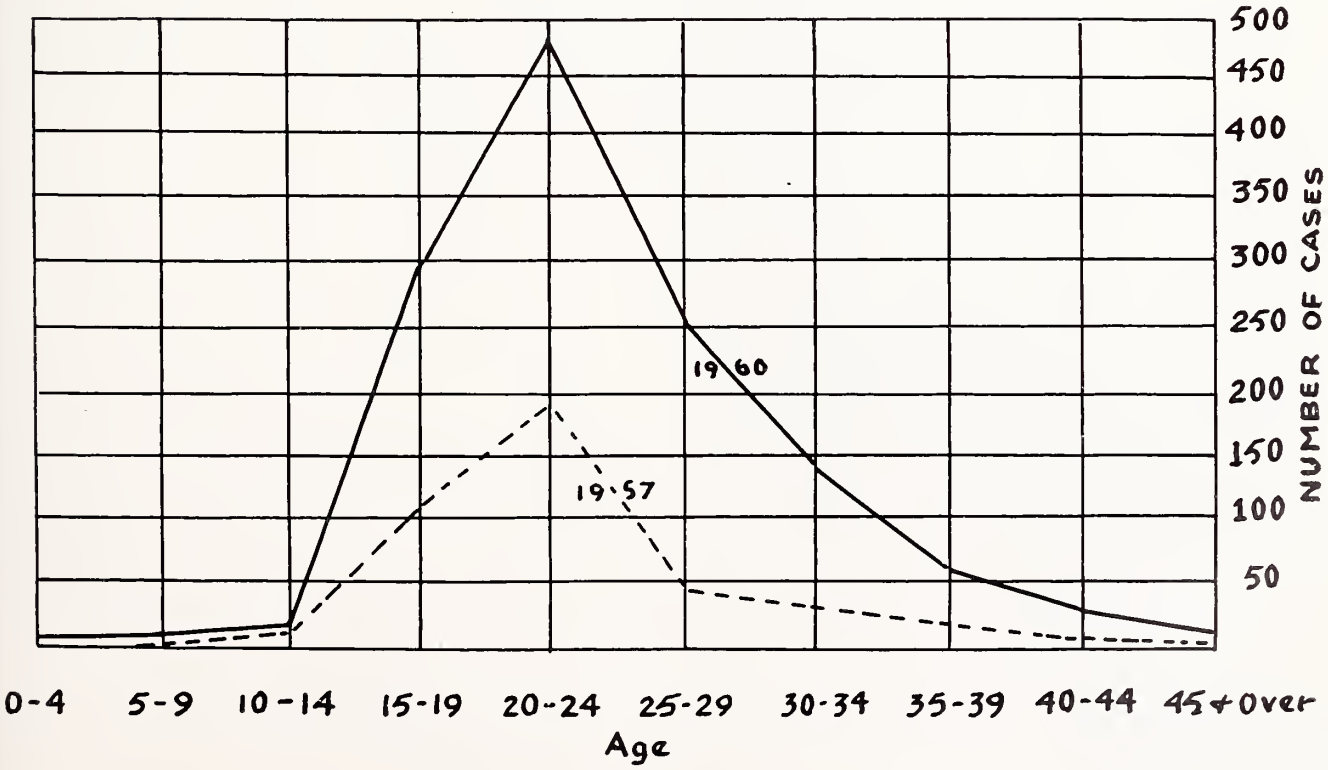
The total number of gonorrhea cases reported from all sources in the United States in 1960 was 246,697. These constitute the largest number of reported cases since 1951. During the interval between 1951 and 1958, there was a steady decline, but starting with 1958, the numbers of cases reported has shown a trend upward.

In Iowa during the year 1960, there were 1,401 cases of gonorrhea reported. Contrastingly, there were only 596 in 1957, 921 in 1958, and 1,014 in 1959. From the 1,401 patients, 1,961 contacts were discovered, and 80 per cent of them were brought in for examination. Of those examined, approximately 50 per cent were found to have been infected. It is our observation that there is still a high prevalence of the infection among teenagers, and that the peak of infection (see the accompanying chart) is "leaning" toward younger and younger people.

It has been found that treatment in the female, in many instances, has been ineffective when the previously recommended 600,000 units of penicillin was used. The current recommendation is that 1,800,000 units be used in the treatment of the female to provide adequate therapy and to prevent lapse.

The State Department of Health will provide penicillin to the private physician for the treatment of all venereal diseases. This provision, however, is contingent upon the physician's furnishing the Department with the prescribed morbidity report.

INCIDENCE OF GONORRHEA BY AGE GROUPS
IOWA, 1957 AND 1960



EXTERNAL CARDIAC MASSAGE

External cardiac massage, a recently-developed technic for restoring heartbeat without opening the chest, is the subject of a new medical teaching film released early in April by Smith, Kline & French Laboratories.

Produced in cooperation with the developers of the method, R. Jude, W. B. Kouwenhoven and G. Guy Knickerbocker, all of Johns Hopkins, "External Cardiac Massage" shows how the technic substitutes externally-applied pressure for the rhythmic contractions of normal heart muscle, thereby maintaining circulation at a level sufficient to sustain life. The new method may well revolutionize the concept of reviving hearts. In more than 100 cases of cardiac arrest so treated at Johns Hopkins Hospital, 62 per cent were successfully resuscitated to their previous cardiac and central nervous system status.

If external cardiac massage, combined with assisted ventilation, is begun within four minutes after cardiac arrest, the central nervous system will receive enough oxygen to prevent serious damage.

An animated sequence in the film illustrates how manual depression of the lower sternum compresses the heart and forces blood into the pulmonary and systemic vessels. Release of the pressure allows the chest to reexpand and the heart to fill.

The film shows that the method can be used both outside and within the hospital. It also distinguishes between heart arrest and ventricular fibrillation, illustrates the use of the external fibrillator as part of the resuscitation technic, and demonstrates the application of the technic to infants and children.

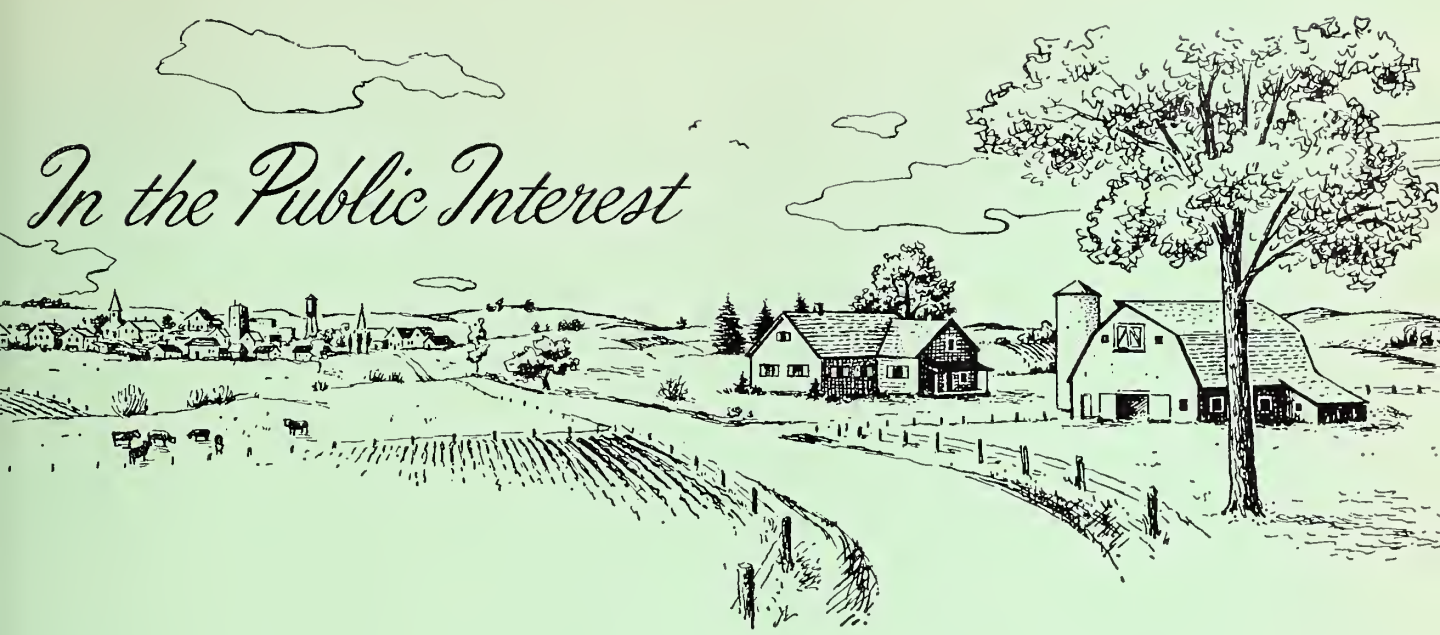
This 21-minute, color and sound film is available on free loan from local SK&F representatives.

IOWA TUBERCULOSIS DEATHS—1959

The accompanying charts showing the lapses of time between diagnosis and death in Iowa's 1959 tuberculosis fatalities are of definite interest. The average age of patients for whom tuberculosis was the primary cause of death, we find, was 63 years, and the average age of patients for whom tuberculosis served as a contributing cause of death was 67 years. Of the total of 129 deaths, only three were in persons under 40 years of age. Only six of the total were "unknown" (i.e., undiagnosed) prior to death. A great majority were known to be tubercular, by physicians and health officers, for years prior to their deaths.

These two charts show much of the picture of the public health problems of tuberculosis. The disease is largely one of the older age group. Also, the tuberculosis case very frequently remains a public health problem for many years.

	Length of Time Between Diagnosis and Death											
Patients' Age at Death	Un-known	Under 1 mo.	1-3 mos.	3-6 mos.	6-12 mos.	1-2 yrs.	2-3 yrs.	3-4 yrs.	4-5 yrs.	5-10 yrs.	Over 10 yrs.	Total
DEATHS FOR WHICH TUBERCULOSIS WAS LISTED AS THE PRIMARY CAUSE												
Under 20 yrs.			(No deaths in persons under 20 years of age)									
20-29 yrs.			1									1
30-39 yrs.							1				1	2
40-49 yrs.	1	1				2	1	1		2	3	11
50-59 yrs.					3	3			1	4	9	20
60-69 yrs.	2	1		1	1	1	1	3	3	2	4	19
70 yrs. and over	2	4	2		1	2	4	3	4	8	4	34
TOTALS	5	6	3	1	5	8	7	7	8	16	21	87
DEATHS FOR WHICH TUBERCULOSIS WAS LISTED AS A CONTRIBUTING CAUSE												
Under 40 yrs.			(No deaths in persons under 40 years of age)									
40-49 yrs.									1		1	2
50-59 yrs.				1	1	5	1				1	9
60-69 yrs.	1	1		1	1	1	1	2	2	4	1	15
70 yrs. and over		1			3	4	1			3	4	16
TOTALS	1	2		2	5	10	3	2	3	7	7	42



Doctors Should Increase Their

Participation in Civic Affairs

Physicians have both an obligation and a need to take active parts in decision-making on a very broad front, and though they can by no means lessen the time and attention that they have always devoted to their scientific pursuits and to the care of their patients, they should intensify their study of economic and governmental problems, some of them quite separate from health care, and employ every available means to make their views known.

No one quarrels seriously with the proposition that medical decisions should be made by medical men. It is quite true that nowadays, much more frequently than in the past, a young mother is inclined to question her child's doctor about the treatment he has prescribed, since she feels that the articles on health topics in the READER'S DIGEST and the LADIES' HOME JOURNAL have brought her abreast of the latest advances in therapy. But if her youngster is really ill, she is as quick as ever to defer to the doctor's judgment.

However, when the decision to be made is a civic one that will affect the practice of medicine—when it concerns governmental financing of medical care or any of the other civic topics in which physicians take a special interest—neither the young mother nor others of the lay public are inclined to defer to the physician's wisdom. Quite on the contrary, like Mr. Walter Reuther in his televised debate with Dr. Edward R. Annis, the layman is of the opinion that the doctor has no doubt been too busy to inform himself fully upon anything outside the consulting room or the surgical suite, *and therefore has no right to form opinions on civic issues even for himself!*

The day has long passed when the man-in-the-street waited, almost literally with cap in hand, to learn the opinion of the learned physician, the attorney, the professor or the clergyman. Now, he takes a "show me" attitude.

In 1961, like all other people who wish their attitudes on questions of the day to prevail, doctors must engage in social and economic research, must form their opinions on the basis of carefully assembled evidence, must seek allies, and must mount campaigns designed to win popular support for their ideas.

It goes without saying that physicians are busier than almost any other group of people. They are on call 24 hours each day and seven days each week, and the services that they are called upon to perform ordinarily brook no postponement. In addition, the new products and technics that are constantly being made available to them require uncounted hours of study and evaluation, and thus their education is never completed. But regardless of how busy they are, circumstances demand that they concern themselves deeply with problems outside of their medical practice—ones that require a great deal of "home work."

THE IMPLICATIONS OF CURRENT HEALTH-CARE PROPOSALS NEED CLARIFICATION

Physicians have constantly been aware of the deficiencies in the existing system of health care, and they have worked steadily at finding remedies for them. Throughout the past 150 years, they have concentrated upon eliminating quackery. They have taken the lead in promoting sanitation both by helping to frame and supporting the passage of the requisite laws and ordinances, and by conducting educational campaigns. To help keep medical education at a high level of efficiency, they have reached into their pockets to help finance the medical schools, and to provide loans to medical students. And together with the hospitals, they have pioneered in the prepayment financing of medical care by developing and perfecting Blue Cross and Blue Shield.

Yet there are other tasks remaining for doctors to finish in the same area. Since it is they who know most about it, they should undertake to make their fellow citizens thoroughly aware of the nature and importance of the doctor-patient relationship, and then—as objectively as they would forecast the probable side-effects of an untried pattern of therapy—they should point out the ways in which the introduction of the government into it as a third party could be expected to affect it. They should make clear, in other words, how such a change would affect the patient's continuing to receive kindly care, individually and in such a fashion as best to preserve his dignity, and how this sort of change would affect the doctor's freedom to treat each case according to its particular requirements, and would affect medicine's attractiveness as an occupation in the eyes of talented young people.

MEDICINE SHOULD TAKE STANDS ON NON-MEDICAL ISSUES

It has been the American tradition—nowhere more consistently than in the practice of medicine —to exalt the individual citizen. His property, his rights, his dignity and his needs have been held inviolate. It is on that basis that physicians have resisted repeated attempts at regimentation, compulsion and mass-production as they might be applied to health care. Other occupational groups —the other professions, the business community and others—hold the same ideals and have advocated the same policies. In some instances, they have supported the attitudes adopted by physicians. But if doctors are to continue having the assistance of those other organizations, they will have to reciprocate.

Thus, preparing to take positions with regard to non-medical questions of the day should be added to the agenda of each medical society. No one, of course, would seriously advocate that the officers of any such group—county, state or national—should pledge their constituents on a matter that hadn't received careful study by fully representative groups of its members, as the governing body of the National Council of Churches did within recent weeks. Still, if groups of doctors were to conduct the requisite research, and if their carefully drawn conclusions were then ratified by the membership, the medical profession at its various levels would be in position to give aid to, as well as to seek support from, other influential organizations.

INDIVIDUAL POLITICAL ACTION MUST BE INTENSIFIED

Most importantly, of course, individual physicians no less than other advocates of the preservation of free enterprise and of individual freedoms must devote greater shares of their time and of their substance to politics, either by offering themselves for public office or by participating in the campaigns of candidates in whom they have confidence.

As Senator Jack Miller told the ISMS House of Delegates at its annual meeting in Des Moines last month, doctors must—and probably can—double or treble their monetary contributions to the political parties of their choice, or to the campaign funds of individual candidates. Moreover, as he also pointed out, besides casting their own ballots, doctors and their wives can help to utilize fully-proved technics for getting out the votes of all of the citizens who share their philosophy of government.

SUMMARY

Only by explaining their attitudes on medico-economic issues fully and convincingly, and by cooperating with other groups of people who are devoted to American traditions and to the American way of life, can physicians hope to make their ideas prevail. Those explanations and that cooperation will take a very great deal of hard work!

Iowa Association of Medical Assistants

OBJECTIVES AND HISTORY

Six years ago, the employees of Iowa physicians felt the need for an organization which would serve as a means for their self-betterment and for cultivating an attitude of dedication among themselves.

The term "medical assistant" is generally applied to any person employed in a physician's office or clinic as a nurse, secretary, receptionist, technician or combination "girl Friday."

The purpose of our organization parallels those of the medical profession—to inspire its members to render honest, loyal and more efficient service to the profession and to the public which they serve, to render educational services for the self-betterment of its members, and to stimulate a feeling of fellowship and cooperation. We are not and never will become a collective bargaining agency or a union.

The first organizational meeting in Iowa was held in Des Moines in January, 1955, and by May, 1956 ten local chapters had been established throughout the state with approximately 206 members. By 1960, Iowa had 13 chapters with an average of 25 members each. Our national organization was recognized by the American Medical Association in 1956, and the affiliated states swelled from 17 to 28 within a short span of years. The total membership at present is 9,000.

As part of IAMA's educational program five workshops have been held. The first was in 1957 at Pallisades-Kepler State Park near Cedar Rapids, with the Linn County chapter acting as hostess. In 1958 the Mason City chapter was hostess for a workshop at the Methodist Camp at Clear Lake. In 1959 Waterloo and Cedar Falls members were in charge of the workshop held on the campus of Iowa State Teachers College. For the past two years the State University of Iowa, in cooperation with the Iowa State Medical Society and the Iowa Association of Medical Assistants, has sponsored an in-service training workshop at the Iowa Center for Continuation Study under the direction of Dr. W. D. Coder, S.U.I. coordinator of conferences. This course is given for a week and provides practical information about the general procedures for organizing and performing the business and routine activities of the modern medical office.

IAMA has the distinction of having three members elected to national offices: Mrs. Marion Little, of Cedar Rapids, is the immediate past-president; Mrs. Genevieve Wenke, formerly of Cedar Rapids, served as a member of the Board of Trustees, and Mrs. Geraldine Smith, of Iowa City, is a present member of the Board of Trustees. Both Mrs. Little and Mrs. Smith are past-presidents of their local chapters, and past-presidents of IAMA. Dr. Fred Sternagel of West Des Moines, just recently completed a three-year term as a member of the AAMA Board of Advisors. Every Iowa Medical Assistant is proud of Dr. Sternagel, and grateful for the years of service he has given us.

With the steadfast backing of the American Medical Association and the Iowa State Medical Society, the Iowa Association of Medical Assistants should continue its steady enlargement of membership wishing to better equip its members in the art of serving their fellowmen as medical assistants of their doctor employers.

MAKE PLANS

to attend the

1961 State Convention

of the

Iowa Association Of Medical Assistants

—◆—

BLACKHAWK HOTEL

DAVENPORT

MAY 5, 6, 7

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Lives there a man with soul so dead
Who never to himself hath said,
"I know a wonderful doctor"?

I know many a wonderful doctor. Don't you?

I met one by proxy.

My brother's family won a "Price Is Right" trip to Rio de Janeiro, and the highlight of their trip was meeting Dr. Robert Davies, of Pittsburgh, Pennsylvania. At his own expense, he was flying to Rio and back, not to see the scenery, not to get a deserved rest, not to relax, but to perform 132 eye operations in six days at a mission hospital in the interior. From Rio, he had to fly 800 miles in an air taxi (round trip), and was bringing instruments with which to equip natives whom he expected to train, so that they could carry on with the work after his departure.

The hardships that Dr. Davies was to endure, even for those few days, would make a story too long for this column. That was his first "vacation" in Brazil, but during each of the past three years, he had taken similar "rests" in Panama.

This is the story of just one doctor, a man who lives in Pennsylvania. He personifies the dedication to service that we must project to the public as the true image of the American physician. Apparently we need public relations agents to show people the sort of man their doctor really is! We need Davids to meet and conquer the socialist Goliaths. Truth and good are on our side, but we must have the sling-shot of the professional public-relations agent.

I have told only one tale—actually only a small part of one tale. Conversations with Auxiliary members reveal that there are many such stories to be told. Nearly everyone you meet can tell a story about a dedicated doctor. Won't you share your story with us? The WOMAN'S AUXILIARY NEWS will print the narratives. Let's publicize what kind of people doctors really are.

If you should ever be invited to be the guest of the Dubuque Auxiliary, be sure to accept! That is precisely what happened to me, and I accepted. The district councilor, Mrs. N. L. Hersey, and I, bedecked with corsages, partook of beef tenderloin and "trimmings" at the Dubuque Country Club.

The Dubuque Auxiliary is a fully matured young lady who loves and respects the state Auxiliary as her parent, but is self-sufficient. She knows that union is strength, and so is a part of our whole, even though distance almost stymies her sending representatives to conferences at state headquarters.

Each member of the Dubuque Auxiliary feels a personal responsibility to serve. No one could question the high esteem the members enjoy in their home town. Just shopping in the stores brought this to light.

On the evening that we were there, substantial profits (financial and good will) were reported by the committee that had had charge of the Mardi Gras Ball, new officers were elected, and the student nurses whose education the Auxiliary is financing were honored. Also, legislative delevopments were reported. The meeting proved to be a splendid melding of sociability and business—as a consequence, to a considerable extent, of the efforts of "Jackie" Merritt, the president. Wish you all knew her! She has five small children, loves fine arts, and does much community service. Dubuque would be an excellent place in which to look for someone to personify "the doctor's wife" as we would like the public to visualize and characterize her.

—LILLIAN NIELSEN
President

THIRD NATIONAL RURAL HEALTH STUDY CONFERENCE

There has been considerable delay in bringing this report to you, but the Third National Rural Health Study Conference, in Chicago on February 3 and 4, continues to be important. There, among other things, it was decided that the next of the AMA Council on Rural Health's Regional Conferences will be held in Des Moines. The dates subsequently selected for the Des Moines meeting are May 18-19, 1962.

The theme of the Chicago meeting was "Information vs. Misinformation," and as the conference progressed, your representative was highly impressed with the facts that the speakers presented, in contrast to the fallacies that are commonly presented to the public today. From the first panel of authorities, whose topic was "Today's Health Dollar," we learned that the medical profession is earnestly trying to help the public spend its health dollar more wisely. It is the responsibility of physicians to alert their patients to the possible dangers of self-diagnosis and self-medication. The vast majority of Americans are taking self-prescribed vitamins, though they have no need for them. The

annual waste on unneeded vitamins is estimated at $350 million. Although most over-the-counter drugs are harmless, Americans are spending an appalling amount of money on them.

Some interesting statistics were presented on prescription drug costs. Sixty per cent of prescriptions today call for drugs costing no more than $3.00. A family of three, on the average, spends between $60 and $65 on medicines in the course of a year, and only six per cent spend more than $200. Actually, though modern drugs are far more effective, a smaller share of our health dollar goes to pay for them than went to pay for medicines 20 or more years ago. Sixty-nine per cent of families with high medical expenditures have chronic illness as one of their problems.

Regarding hospital costs, it was reported that the increases in recent years have been due to several factors: inflation, the changing demands of therapy, and higher pay for hospital employees. Yet, there undoubtedly is too much use of hospital care, as indicated by increases in hospitalization insurance premiums. In 1948, hospital costs took 21c of our health dollar; in 1959 they took 26c. There are almost 2,000,000 hospital beds in the U. S. One out of every eight people is hospitalized at some time during each year.

We learned that it is the task of the World Medical Association to bring medical care to the newly developing counties, and to maintain high standards at the same time.

Dr. Reckless, formerly a British physician and now a resident in psychiatry at Duke University, presented extremely interesting information on the system of health care in his homeland. Physicians there are somewhat dissatisfied. In 1957, 75 per cent voted to withdraw from the National Health Service, a few at a time. Medicine no longer attracts men of the greatest potential and vocational urge, in England, and there definitely has been a change in morale. Physicians are emigrating in large numbers. If one wants to practice the best kind of medicine, he has to leave.

There is strong pressure to bring back private practice, Dr. Reckless stated. Even the poor say that they can't afford the high cost of the national program. They have learned that if one takes with one hand, he must give with the other. Forty per cent of the Britisher's income goes for taxes. If the patient is dissatisfied, there is no private practice for him to turn to. Under the NHS, the patient is supposed to have free choice of physician, but it doesn't work out that way.

As many as 50 patients are usually waiting to see the doctor. Ten per cent of them really have something wrong with them, and there isn't time for him to give them the attention they need. Forty-eight thousand people have been waiting 2½-3 years for elective surgery. The average hospital stay in America is seven days, but in Britain it is twenty days. No new hospitals have been built in Great Britain since the inauguration of NHS. Absenteeism among the British working people has exactly doubled, and the costs of the national health program have doubled in the past five years.

Dr. Frederick Stare, a Harvard nutritionist, spoke on nutrition facts and fallacies. He said very flatly that he thinks fluorine is necessary in our diet. Our children have 60 per cent more cavities than would be necessary if they were drinking fluoridated water regularly. As for "health foods," he declared that there is nothing wrong with them except the implication that they will cure whatever may be wrong with us. He recommended the movie on food quackery entitled "Medicine Man."

Dr. Wescoe, president of the University of Kansas, told what his medical school does to get its graduates to enter practice in small Kansas towns and to stay there. It sponsors a preceptorship program under which each student spends 5½ weeks in a community of fewer than 2,500 people. The Kansas Medical School has the largest program of continuing medical education in the country. It presents seminars in eight different communities each year—six programs in each place. In addition, many short courses for practicing physicians are offered on the Kansas City campus, and the medical school offers general practice residencies.

Dr. Wescoe feels that communities must take the initiative in finding physicians, and when they do so, they must see whether they satisfy the following prerequisites:

1. Is the community or trade area large enough to support a physician?
2. Are the facilities for his practice adequate?
3. What about schools, churches, service clubs, stores, etc.?
4. Will people continue going out of town for medical care, even if a doctor is located close at hand?

Summarizing the conference, Mr. Battles, of the National Grange, said he was proud of this country's record of progress in health and medicine. He feels that rural groups and medical groups must try to work together. Health and medical expenses are not too high, and they have risen less than most costs. He thinks we should support the further extension of voluntary health care financing. He favors our American system, even with all of its problems.

—MRS. S. P. LEINBACH

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AMA AUXILIARY PLANS 38TH ANNUAL CONVENTION

Foods for survival and common sense safety precautions for aged persons around the home are two outstanding presentations slated for the 38th annual convention of the Woman's Auxiliary to the AMA.

More than 3,000 physicians' wives are expected to attend the meeting which is being held in conjunction with the AMA annual meeting June 26 to 29 in New York City. Auxiliary headquarters will be the Hotel Roosevelt.

The convention will formally convene Monday morning, June 26 with reports of officers and chairman and election of the 1962 nominating committee. The opening will be preceded by committee and board meetings on Saturday and Sunday, June 24 and 25.

The annual tea and fashion show honoring the president, Mrs. William Mackersie, of Detroit, Michigan, and the president-elect, Mrs. Harlan English, of Danville, Illinois, will be held at the U. N. Building Monday afternoon.

Besides regular business sessions on Tuesday, presentations will be made in the fields of civil defense, safety, health careers, mental health and community service.

National past presidents of the Auxiliary will be honored at Tuesday's luncheon. Guest speaker will be Dr. E. Vincent Askey, AMA president. The Auxiliary at this time will announce its contribution to the nation's medical schools through the American Medical Education Foundation. Awards of merit also will be presented to the state and county Auxiliaries contributing the most to this project.

New national officers and committee chairmen will be introduced at Thursday morning's workshop. The AMA Communications Division will put on a "Speaking Up for Medicine" dramatic presentation to illustrate how Auxiliary members can help to tell medicine's positive story on local radio and TV stations, in the newspapers and home communities.

Throughout the week a full schedule of activities will be arranged for the teen-aged members of AMA families by the Auxiliary.

All Auxiliary members, their guests and physicians attending the AMA annual meeting may participate in the social functions and attend the general meetings of the Auxiliary. A special invitation is extended to all members of medical society advisory committees to state and county Auxiliaries and state and county executive secretaries to attend the Thursday morning planning conference and workshop.

Auxiliary members and their guests may register in the mezzanine ballroom foyer of the Hotel Roosevelt Sunday afternoon, all day Monday and Tuesday, and until noon on Wednesday.

Local convention arrangements are under the of Mrs. Harry F. Pohlmann, of Middletown, New York, chairman, and Mrs. John L. Neubert, of Roslyn Heights, New York, co-chairman.

MEETING YOUR MEMBERS

Candidate No. 10
Mrs. Verne (Zoe) Heimann
Sioux City (Woodbury County)

This lady is president-elect of one of the larger Auxiliaries in Iowa, namely, Sioux Med-Dames. Knowing she is 5 ft. 1 in. tall, has eyes of blue and hair of grey is no help to those who do not know her as a personal friend. Thus, by way of introduction:

Albia, Iowa
Lays claim to her fame,
But this might not be
A clue to her name.
To Woodbury County
Lending her talent,
Through all her endeavors
Not a bit errant.

She's faithful to symphonies,
And "handicapped" sales.
Her ardent endeavors
Lead down many trails.
She knows her antiques
And seeks a good buy.
To meet is to like her,
No one needs to try.

Three children age seventeen,
Thirteen and ten,
Are soon to become
Fine ladies and men.
They surely are proud
Of a mother like this.
Be it work or just fun,
She's sure not to miss.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

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(1) Carter, S.: *M. Clin. North America* 37:315, 1953.
(2) Maltby, G. L.: *J. Maine M. A.* 48:257, 1957.
(3) Crawley, J. W.: *M. Clin. North America* 42:317, 1958.

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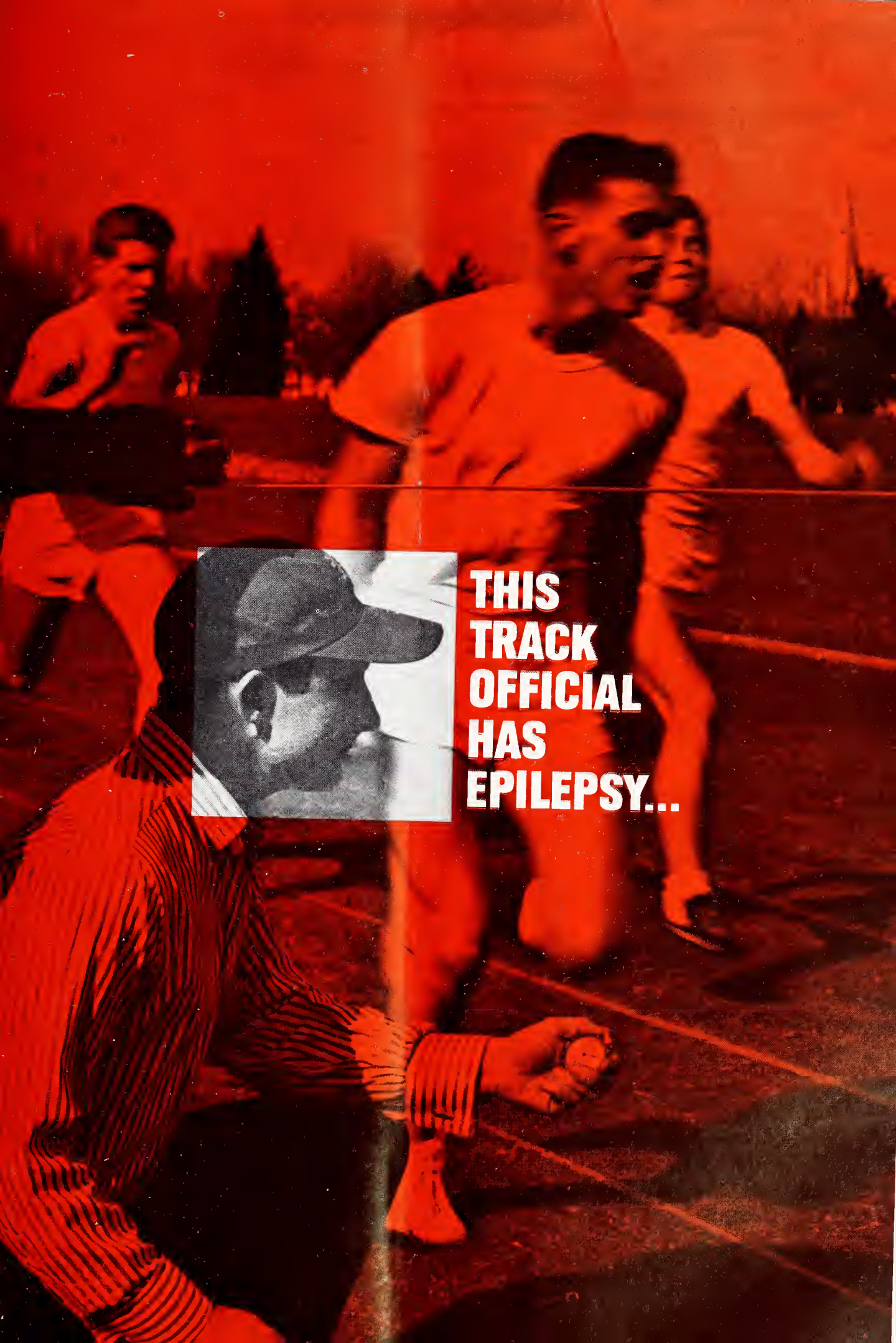
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Journal of the IOWA STATE MEDICAL SOCIETY

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The Changing Image of the Doctor

The President-Elect's Address

OTTO N. GLESNE, M.D.

FORT DODGE

TODAY, I HAVE the privilege and the rather difficult task of trying to tell you what I think should be the course of action for Iowa medicine during the coming year. I do not presume to be able to forecast what may arise, but on the basis of what has happened during the past six months, I think I can predict what it will be necessary for us doctors to accomplish in order that we may continue to practice medicine under the Free Enterprise System. Therefore, I address my remarks to the subject "The Changing Image of the Doctor."

One of the reasons for our present-day lack of esteem in the eyes of the public is the change in image that I have just mentioned. I should like to picture the doctor of 30 to 50 years ago for you, and to compare him with the present-day practicing physician, whether general practitioner or specialist, group practitioner or partner.

The practicing physician of 30 to 50 years ago is exemplified by the Files painting that shows a doctor sitting at the bedside of a little pneumonia patient, waiting for some evidence of a change that nature or the doctor might bring about. That doctor gave of himself. He gave time and he gave support through personal contact. He had little else to offer except the Art of Medicine. The drugs then were inadequate. The hospitals were looked upon by most people as places in which to die. Chemistry hadn't yet been applied to medicine, and radiology, physiotherapy, antibiotics, insulin and many of the other diagnostic and therapeutic aids were not yet in existence.

The doctor of that era, in many instances, took care of his own accounts. He had an intimate knowledge of the financial status of each of his patients. If he had an x-ray machine, he took his own x-rays. He gave his own shots. In many instances he dispensed drugs, and had additional opportunities to check upon his patients' progress when they came back to him for refills. He often conducted physical examinations right in his own consulting room, with no attendant present. In other words, he had 10 to 20 times as much opportunity to talk with his patient, and thus their relationship became much more intimate and, in many instances, more effective than nowadays.

His record-keeping was minimum. He did not have to write up the history and the physical examination in detail. He had no fear of being dismissed from the hospital staff. He had no need to fear law suits. He was not bothered by a multiplicity of organizations, both medical and nonmedical, like those that now seek attention from doctors.

Contrast this with the procedures of the present-day physician. Nowadays the doctor examines the patient, to be sure, but often his secretary or his nurse takes the history. So as to conserve time, he completes the physical examination rather quickly, though I think more thoroughly. Then, instead of performing numerous services for the patient himself, he utilizes his many new "arms," so to speak. The nurse gives the shots. The lab. technician checks the blood and conducts the laboratory tests, and the x-ray technician takes the x-rays, and turns them over to a radiologist for interpretation. Physiotherapy, if it is required, is done by another M.D. or by a physiotherapist. If the present-day doctor then looks at the account and tries to collect the money, the question that is immediately asked is "Why does he bother with this detail? Doesn't he have enough business?"

Then, when he has finished all of the above, he has to spend one hour or more per day in dictating or writing down notes on the records. "They must be in tip-top shape," the insurance companies say. Then, if he has any time to spare, he has to get his hospital records up to date, or he will be dropped and forever shamed.

For all of these reasons, the physician of today is able to spend less time with individual patients, and even though the service he renders may be better, the patients regret the lack of contact. This dissatisfaction was very pointedly brought out in a happening recently here in Des Moines. One of our elder citizens was ill and had been seen by an M.D. off and on, in and out of the hospital. One day in the hospital, the doctor apparently sensed the situation and paused to ask this mother of one of my relatives whether there was anything she would like done for her, or whether there was any question she wanted to ask. Quick as a flash came the question: "When are you and I going to sit down and get acquainted?"

These are a few of the factors which perhaps have contributed to a decline in the physician's prestige with the public. Even today, when many of us older M.D.'s feel that the younger men are less dedicated than we were to the idea of service, and when we suspect that the youngsters make too much money, or go at their work in the wrong way, I cannot help saying that my contacts with younger men entering practice and my contacts with those who have been practicing for five or 10 years indicate that the great majority are dedicated to the practice of medicine. The vast majority of these men are conscientious and are doing a good job.

With all of our new diagnostic procedures, with our additional help, with all our new drugs, with our increased care in maintaining complete records, and with our concentration upon the scientific aspects of medicine, we have become more and more out of touch with our patients. The patient is further and further away, and as time goes on, there is a weakening of the mutual respect that personal contact used to foster. Sad to say, the family physician depicted in the Files painting is no more. Yet in the next breath I must ask whether you and I would really like to go back to those days. My answer is "No."

What, then, can be done to bring us back into the esteem of our fellow citizens? Or need we be concerned about the situation? In these days of the onslaught of socialized medicine, we need to be more and more concerned, and I wish to submit the following as one man's notion about what our course of action should be.

SUGGESTIONS FOR A PROGRAM

1. Get with and behind other groups of people —kindred souls, so to speak—who have the same interests as regards the socialized state.

2. Get into politics. It matters not whether you are a Republican or a Democrat, be a good member of your party. Contribute to the one of your choice. Then, on medical subjects, speak with authority and knowledge. With the educational background you all have, you can contribute much to the assembling of facts. You need not stop at that point, however. In matters which are non-medical but which involve your community, your state and your nation, identify yourself as a citizen and speak as a citizen. Do not be ashamed of politics. Do not be ashamed of lobbying. Honest lobbying—bringing facts to the attention of the Congress or the Legislature—is an honest undertaking. All lawmakers will appreciate your honest attempt to give them information.

3. Join non-medical organizations that have programs that you are interested in. Join your Chamber of Commerce. It was a pleasant surprise for me, when I attended the politico-economic symposium presented by the U. S. Chamber of Commerce, in Omaha last March, to see another organization listing the bad points of the King-Anderson Bill. Little do we realize the potential in this type of activity. In the non-medical fields, there are many individuals and organizations that are interested in the prevention of the socialized state just as much as we are.

4. Join in community activities. Join a church. Let your fellow citizens know that you would like to contribute of your knowledge and of your time, and that your reason is that you want in some way to pay rent for the space you occupy here on earth. I wish to say emphatically, as Dr. Edward R. Annis has said before, that if your only purpose as a physician is to make money, you have very little reason to exist. Service to society for the space you occupy—that is very cheap rent!

Along with this busy schedule of activities, I above all wish, hope and beg of you to become more active in your county, state and national medical organizations. The AMA, the Iowa Medical Society and your county medical society exist only for your benefit. They thrive on participation, and they are working night and day to do what you want done.

6. This whole situation—that of fighting the onslaught of the socialized state—involves a philosophy of living, so to speak, a way of life. It is not a matter of more or less income for doctors. This is not a matter of wondering whether the doctor is going to survive or not. After all, he is a very small segment of society, but I hope an important member, and he is interested in the concept of life so aptly expressed by C. Marshall Lee in an essay entitled "The Challenge of Medical Care Insurance."* Here, I think, is a significant passage from it:

A PHILOSOPHY OF LIFE

"We doctors, like many other people in the United States, like to believe that the fundamental social and economic structure of this country is predicated on the assumption that each adult is industrious and responsible, that he should be rewarded in proportion to his skill and industry, and that as a free citizen his rights are balanced by his obligations to others. He expects to support and provide for himself and his family by his own efforts in his own way, but with proper concern for those weaker and less able than himself. He does not ask for unearned help at the expense of someone else, unless through circumstances beyond his control he urgently needs it. He understands that man is imperfect and needs curbs and controls, and that some men need more than others. He knows that fallibility and selfishness are human weaknesses correctable by improving each individual, which is to say that they are not the product of an economic system. He recognizes that no man has the right to oppress other men, but that privilege and material advantage, if honestly and justly gained, are fair compensation for competitive enterprise, industry and prudence. He believes that stagnation and deterioration are inevitable if the incentives to individual growth are denied. He recognizes that pride in a competitive achievement is a legitimate virtue that merits recognition and reward. It is evident to him that if everyone begins at the top, there is nowhere to go but down, and that the top, even as a point of departure, will not be very high. A forest of seedlings is no forest at all. Some trees grow taller than others. This is the essence of democracy, of controlled free enterprise, of capitalism. By whatever name it is called, it requires no apology. Its achievements are proper grounds for vigorous pride. Its failures are direct-

* Lee, C. M., Jr.: Challenge of medical care insurance: essay on principles, philosophies and practices. NEW ENGLAND J. MED., 262:332-342, (Feb. 18) 1960.

ly traceable to aggregates of weakness or deceit in its human components, and do not stem from the system itself. A city and all its people should not be destroyed because a few criminals are among them."

Gentlemen, I submit to you that if we are going to maintain a philosophy of living such as the one outlined above, much work must be done, both in organized medicine and in your communities, and in and out of other organizations. With the help of the other officers, with the help of the IMS office personnel, it is my hope that I can indicate to you the areas of activity, and the need for emphasis on particular activities at particular times. If other officers and I can get the cooperation that has been evidenced in the past, I am sure that we can carry on this campaign to a successful conclusion, momentarily at least, but always keeping an eye on the future, with a long-range program geared to that future.

Business Unusual

F. J. L. BLASINGAME, M.D.

EXECUTIVE VICE PRESIDENT, AMERICAN MEDICAL ASSOCIATION

ACCORDING TO ITS constitution and bylaws, the American Medical Association is organized "to promote the art and science of medicine and the betterment of public health." To accomplish these laudable ends in modern society is no simple task.

The AMA gains its strength by establishing and promulgating high standards of medical ethics and by carrying out a strong scientific program. If the Association is productive in these two general areas, its additional activities possess effectiveness and meaning.

Space will not permit a recounting of the numerous programs that are in effect, but the total adds up to make the AMA one of the greatest service organizations in our society—serving not only the medical and allied health professions but also the public. A greater appreciation of its workings—its programs and policies—is highly desirable and needed. An alert and informed membership would strengthen further the Association, and make it even more effective for its members and the public that they serve.

Much has been done in recent years to modify and strengthen the AMA's program and to reorganize its staff, building on the strong foundation of the past. Many of these changes have already been recorded in AMA publications, and your study and attention are directed to these reports. When you are in Chicago, it would be timely for you to go to the headquarters and see the changes in your home office. Make a tour, and observe the staff at work.

Your Association is attempting to accommodate to the great burst of knowledge that has occurred in the health field. As you know, there are approximately two million health workers in the U. S. A. —about nine in allied fields for every physician. Profound changes have occurred within the health professions, and additional changes will come in the future. Your counsel and advice are solicited, so that proper and vigorous direction can be forthcoming.

Because modern medicine can do so much to relieve suffering and promote health, it has gained in importance to the individual citizen and to the public as a whole. The environment of medicine is also changing. If physicians are to exercise the leadership in the health field that is theirs to give, they must recognize that this task is their first order of business—business *unusual*—and that it is complex and demanding.

The medical profession must assume this leadership if the quality of health care and the freedom of the patient and the physician are to be preserved. It is to this important matter that I wish to address the remainder of my remarks.

WAR OF IDEAS

No longer can the physician take his public climate for granted. He is challenged politically and economically. Nothing could be more disastrous to the health care of Americans than for physicians to pursue their usual work—demanding as it is—and ignore the struggle that is taking place in the environment in which medicine is practiced today. The physician must be willing to dedicate more of his time, energies and resources to protect this public climate. He must add his individual voice to those of the remainder of the profession. We are in a real war of ideas, and medicine is involved. No physician, be he primarily a teacher, a researcher or a practitioner, can escape this involvement.

Danger lies in the very real possibility that financing of health care will become a function of our federal government. Funds thus managed will subject our system to central controls and direction, will lead to one limiting regulation after another, will produce a monolithic, rigid system, and will smother the advantages of our present varied and competitive system.

As you know, the traditional role of the federal government in public health matters is recognized

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Dr. Blasingame gave this address at the final session of the annual meeting of the Iowa Medical Society, in Des Moines, on April 26, 1961.

and is acceptable, including the provision of funds for facilities (such as Hill-Burton grants for hospital construction), "brick and mortar" for medical schools, and funds for research purposes. The Congress has also seen fit to allow funds for the health care of groups to whom a special obligation is recognized—such as veterans and dependents of service personnel. However, further extension of the federal government into the service area and into the physician-patient relationship is unnecessary, undesirable, dangerous and not in the public interest.

HEALTH IS AN INDIVIDUAL RESPONSIBILITY

The AMA takes the position that health is primarily the responsibility of the individual, regardless of his age. When he or she cannot take care of these health needs, the next responsible group is the family—the individual's relatives. The agencies of the community and of the state come next in order. The federal government should assist in meeting the individual's health needs only by cooperating and working through other levels of government, and it should help only those who are incapable—wholly or in part—of helping themselves.

Our country does not have enough welfare resources to take care of everyone, regardless of need. If we did, it would not, in my judgment, be a wise thing to do. Our federal welfare budget already has reached $15 billion per year, and is second only to our defense expenditures.

The Kerr-Mills Act, which is now the law of the land, essentially fits the AMA's position on health care of the aged. It is a grant-in-aid program financed out of general revenues. The federal government makes a contribution to the state, and the state has to match those funds. Thus the state politician is exposed to the voters, and a built-in brake on abuses and over-expansion is provided. This legislation calls for local administration, and is limited to those recipients who are in need, as determined by those on the scene at the local level.

This approach will provide health care for the needy aged through plans that are tailored by the respective states to meet their local needs, and the extent of the program is optional for each of the states. The fact that the states have responded so rapidly thus far and have considered the problems so earnestly speaks well for the effectiveness of this program and the promptness of its implementation. Hence, it is unnecessary and unwise to consider any other financing mechanism.

HELP FOR THE NEEDY AGED

Beyond this belief in the needlessness of another financing mechanism is the inherent danger in the bill currently before Congress—the King-Anderson Bill that has the endorsement of the Kennedy Administration. This bill is a modified Forand-type approach that would use the Social Security mechanism to finance the health care of the aged. As a result, it would cover many individuals who have not paid for such a benefit, and many who are not in need. Conversely, it would fail to cover many who are in need, if they had no Social Security employment records.

Further, this legislation would allow an individual to pay a $90 deductible and then have coverage to the limit of the hospital or nursing bill, even though that individual might well be able to take care of his own needs. A person in real need might lack the $90 to get initial care. In our society, we probably shall always have a pool of individuals who are not covered by Social Security—those who are unemployable or who, by their life situation, remain unemployed in the usual labor force. For instance, many housewives will never have employment records and, therefore, will never be covered under such terms as those of the King-Anderson proposal.

Under the King-Anderson Bill, the federal government, through the Secretary of Health, Education and Welfare, would establish blanket rules and regulations for the implementation of the program. The King-Anderson Bill, if enacted, would allow the federal government to leapfrog over all other levels of government in regulating the conditions under which medicine could be practiced in hospitals and nursing homes.

The proponents have tried to leave the impression that physicians would not be covered by this bill, but such is not the whole truth. Indeed, interns and residents, pathologists, radiologists, anesthetists and physiatrists working in hospitals would be covered, as would the physician staff needed to operate the outpatient department. Can you imagine running a hospital without physicians?

Free choice of hospital or nursing home could readily be impaired under the King-Anderson Bill. For example, if there is but one hospital in a community and if that hospital were not approved by the Secretary of Health, Education and Welfare, eligible patients who wanted to use that hospital would be deprived of their benefits or would be forced to go to another community and seek out a hospital that had been approved.

This King-Anderson proposal represents a serious and significant attempt at altering the traditional role of Social Security. The Social Security System has always offered *cash* benefits designed as a "floor" of protection. The King-Anderson Bill would graft onto it a *service* benefit in the health-care area, and since the federal government would purchase that service, it would be in position to control and direct the acts and limit the compensation of the individuals and institutions that must provide it.

Such service, once granted to any age group, would readily be made available to all groups of

society, and thus medicine would quickly be controlled and socialized.

Such service would be so expansive—and expensive—as to endanger the entire Social Security System—which, incidentally, the AMA has *never* opposed.

POLITICAL FOOTBALL

The citizens of our country must become better informed concerning the Social Security System, if its abuse, damage or even destruction is to be avoided.

Social Security has become a political football. In the last session of Congress, more than 400 bills were introduced which would have modified the Social Security System. It is interesting to note that modifications usually take place, and have for the last 10 years, just prior to elections. In addition, modifications took place in 1939 and are very likely to occur in 1961.

In the hope of promoting a wider understanding of the Social Security System, the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION recently published an article on the subject by Mr. Ray Peterson, an actuary and distinguished student of the Social Security System.* The contents of that particular article deserve study and discussion by all thoughtful people.

A few additional comments about Social Security are in order. Social Security is the result of politicians' efforts to appeal to the older voters in a maturing or aging society. Labor's support of the System is primarily motivated, in all probability, by its desire to retire workers from the labor market more rapidly than would otherwise be possible, and thus to produce a labor scarcity. In addition, support of the retired workers at federal expense removes, to a degree, the obligation of the unions to support them. Some sections of management have similarily looked with favor upon this opportunity to pass this responsibility on to the taxpayer.

Social Security tax is a gross income tax—beginning with the first dollar earned, and with no exceptions. The money collected is spent at once to take care of those who are currently aged and retired. The government does not pledge itself to take care of present taxpayers when they shall have reached old age. Payment is a political question which may be decided in a way that those now paying will dislike. Whether or not they collect when they reach old age will depend upon the political climate at that time, and demographers predict that although in the next decade the number of people beyond 50 years of age will increase, the number of people younger than 50 will increase even more rapidly. As a result, the young will be able to outvote the old. The already built-in tax increases scheduled to take effect between now and 1969, together with others that may be voted by Congress between now and then, will serve to make younger voters increasingly sensitive to such taxes for the benefit of the aged. These younger people will need their dollars to look after their children, build their homes and start their savings.

Furthermore, it is to be remembered that the 65-year-plus group have more available resources in proportion to their needs than have any other group. The individuals passing into the 65-year-plus group are also better protected than are those who already are in that age group, as evidenced by their accumulated savings, retirement benefits from non-governmental pension systems, and insurance. It seems unreasonable to shoulder the younger working force with unneeded legislation of the King-Anderson type, especially since it will help induce the young to revolt within a few years.

Then too, we have a new day in modern U. S. A. Never before have so many lived so long and so well. Such a development is a sign of success—not of failure—and these mature citizens are an asset, not a liability. It is time American management and American labor recognized that a new day has dawned and that they should look forward—not backward—for a solution. These senior citizens need to be kept in the main stream of life—kept as a part *of* society, not separated into an unproductive group apart *from* society. The King-Anderson Bill is an attempt to solve today's problems with an outdated technic.

CONTEST FOR CONTROL

Proponents of the type of legislation typified by the King-Anderson Bill become propagandists and claim that their proposal is a positive program, even though positively wrong. After talking principally of benefits and seldom mentioning costs and limitations, these propagandists hand out plans for more taxes and more controls, using in many instances the prestige of high offices in government, the window dressing of a group of consultants who have been hand-picked to give a chorus of endorsement, and the rigged conference engineered to turn out the desired result, trumpeted as "positive" findings and used as preachments with a so-called "forward look."

Such programs as the King-Anderson Bill are not inviting and progressive. Instead they fail to come to grips with the problems of the older citizens and to integrate those people into our maturing society.

Speaking for the American Medical Association, let us say that we physicians are not living in the dead past. The program of the AMA, though not perfect, is constantly improving, and is vigorous and dynamic. The AMA is serving the physicians and the people of this nation.

* Peterson, R. M.: Coming Din of Inequity. J.A.M.A., **176**:-118-124, (Apr. 8) 1961. Numerous excerpts from the article can be found in a news story on pages 364-365 of this magazine.

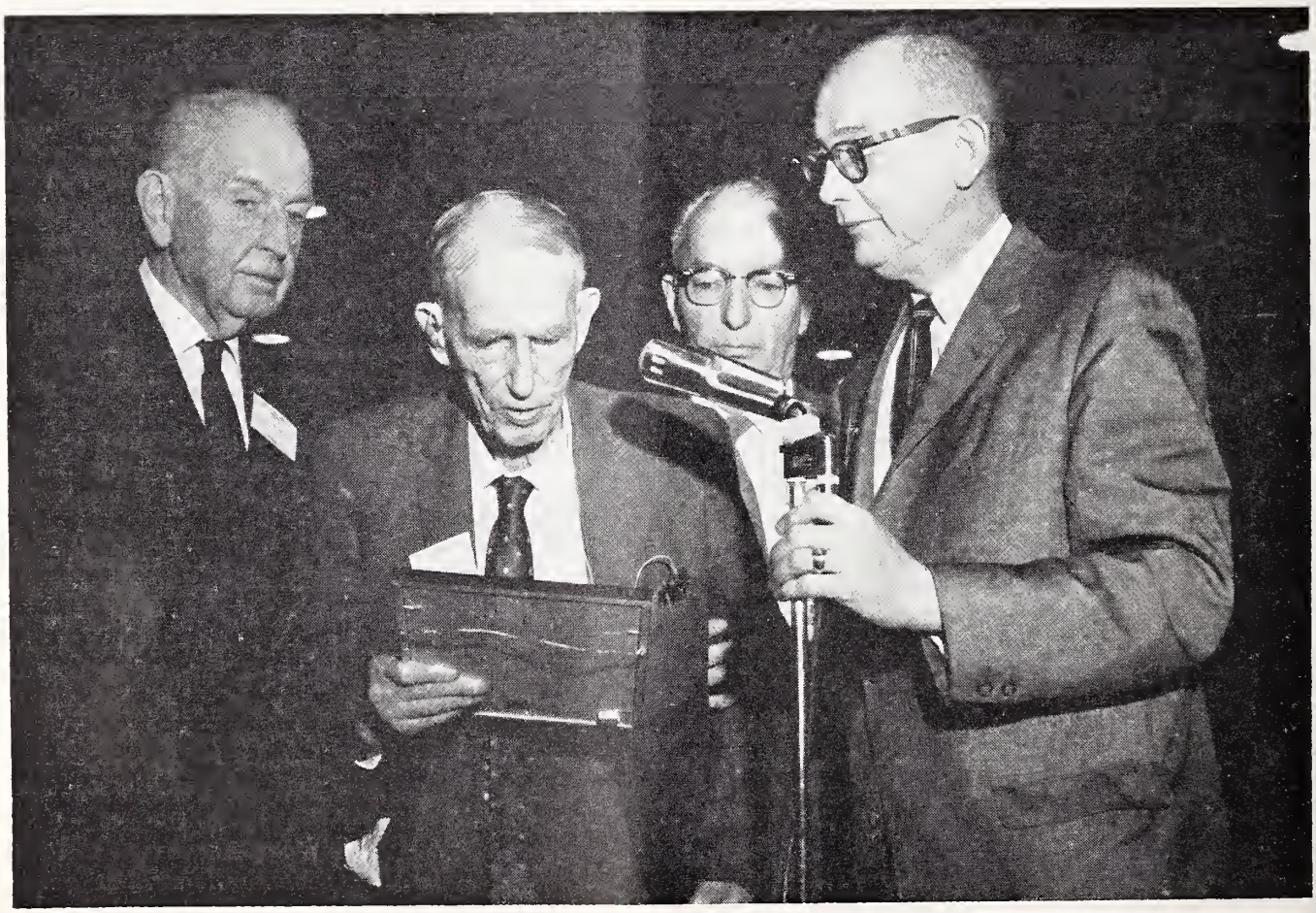
The AMA has been lively in fighting on various fronts ever since it was born, 114 years ago. It is still fighting. Unfortunately, some of our members want the AMA always to have a classic, pleasant look. Such is not the destiny of the AMA in modern America. Medicine is in a struggle, and it is difficult to try to look pleasant when an adversary is after your jugular vein.

Any free society is full of active forces pressing against each other. The contest for control of medicine is a compliment to it and a recognition of its importance. But physicians of our country would do less than their duty if they were to allow medicine to be dominated by politicians or by others less capable of offering wise, courageous leadership.

Let us then be about our professional business—but let us extend it and offer it the necessary direction. This is business unusual. As physicians, individually and collectively, let us assume the responsibility for informing the public whenever and wherever the quality of medical care is threatened. To this unusual business, the physician must give a high priority, and for it he must expend his time and his energy.

We are winning this legislative fight now, but we have formidable opponents. If individual physicians become informed and motivated, and if they realize the real intent of their adversaries, they will continue to win. With an audience of more than two million patients a day, with the resources of an educated group with relatively high prestige, and with many friends in the health field and in other groups and professions, we can rout our enemies—mainly because we are right and they are wrong.

Let us seek the facts, know what we are for, and offer the leadership the public wants of us and has the right to expect.



Dr. W. F. Dean, a 100-year-old Osceola physician who is still practicing, received a special citation from Iowa Medical Society at the opening session of its annual meeting at Veterans Memorial Auditorium, in Des Moines, April 24. The citation mentioned the "high regard and appreciation with which his services in the field of medicine are regarded by the officers and members of the Iowa Medical Society and by the uncounted thousands of persons whom he has benefited during his long years of public and professional service." Dr. Dean has been a member of the Clarke County Medical Society for 67 years and a member of the Iowa Medical Society since 1896.

From left to right, in the picture, are Dr. Conrad R. Harken, Dr. Dean, Dr. George I. Armitage and Dr. E. F. Van Epps. Drs. Harken and Armitage constituted Dr. Dean's honorary escort. Dr. Van Epps made the presentation, as president of the Iowa Medical Society.

Scientific Articles

Abdominal Trauma

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IOWA CITY

THE FREQUENCY and type of trauma to the abdomen are related to the nature of the population and its environment. Roughly estimated, abdominal trauma is responsible for less than 0.2 per cent of all admissions, and less than 3.0 per cent of admissions for trauma at civilian hospitals.[1] Hospitals located in industrial, urban and rural areas not only have varying admission rates but also differ as regards the types of trauma that predominate. Thus, the highest incidence of penetrating wounds of the abdomen caused by gunshots and stabbings is found in city hospitals dealing with emergencies in the lower economic and social strata of the population. In contrast, most of the abdominal trauma cases seen at the S.U.I. Hospitals and at similar institutions result from automobile accidents, and more often they are of the blunt, non-penetrating type. The discussion that is to follow should be read with these ecological factors in mind.

GENERAL CONSIDERATIONS

Abdominal trauma, in general, occurs more often in the male than in the female, and more often in the younger than in the older age groups.[2] However, sex and age frequencies are functions, in part, of the previously enumerated environmental factors. Thus, in civilian practice, there tend to be larger numbers of males and of younger patients among those with penetrating abdominal wounds, than among those with blunt, non-penetrating ones.

About 20 per cent of all abdominal trauma is of the penetrating or open type. Approximately 65 per cent of the patients with penetrating trauma have intraperitoneal visceral injuries. Fifty per cent of penetrating wounds are due to gunshots; 35 per cent to stabs; and the remaining 15 per cent to falls, or to automobile, industrial or other accidents. Although the diagnosis is usually obvious, ice-pick and single bullet wounds are sometimes missed.[3] The angle, size and nature of the wound should be carefully noted. An exit wound should be carefully searched for in cases of bullet and stab injuries. It is important to look for drainage of urine, blood, bile and intestinal contents which, if noted, will help establish the diagnosis and guide the management of the patient.

When there has been a penetration of the abdominal wall, there is an indication for surgical exploration. However, the patient must first be examined carefully for other injuries which may be of equal or greater importance. Fitzgerald, Crawford and DeBakey found that 97 per cent of patients dying from non-penetrating abdominal trauma had other serious injuries.[4] Just 3 per cent had only the abdominal injury. The commonest of the associated difficulties are chest injuries. If respiratory function has been compromised by a crush injury of the chest, by an open, sucking wound or otherwise, it must be dealt with before one proceeds with the exploratory celiotomy. Head and extremity injuries are less frequently associated with open abdominal wounds. Most associated head injuries will not interfere with prompt attention to the open abdominal wound. Occasionally, the head and abdominal injuries should be dealt with simultaneously in the operating room. Definitive care of fractures should usually be delayed until after the abdominal problem has been cared for, although soft-tissue wounds of the extremities and open fractures sometimes can be handled best at the time of the exploratory celiotomy.

Dr. Buckwalter, an associate professor of surgery at the S.U.I. College of Medicine, made this presentation at a postgraduate conference on surgery in Iowa City on December 6, 1960.

Automobile accidents are the cause of more than 50 per cent of non-penetrating or blunt abdominal trauma.[5] Less frequent causes are pedestrian accidents, brawls, cycle mishaps, and industrial and other accidents. Because of the greater difficulty in making a diagnosis, the patient with non-penetrating abdominal trauma is in most instances a more challenging problem than is the patient with penetrating abdominal trauma.[5, 6] Approximately two-thirds of the blunt abdominal trauma patients will ultimately require operation. The problem is to decide which are the ones.

The kind of injury and the patient's course from the mishap until the examination are important. One must not be misled by the fact that the trauma appears to have been inconsequential. Such minimal injuries occasionally can and do cause serious or fatal intra-abdominal wounds. Referred pain, to the shoulder tip or elsewhere, is sometimes of importance in making the diagnosis. The most consistent physical finding is tenderness. However, this finding is difficult to evaluate since patients with insignificant trauma or no trauma to the abdomen also may have abdominal tenderness. Tenderness must be weighed carefully together with other signs, symptoms, and laboratory and x-ray findings. Rebound tenderness and muscle spasm are likewise difficult to interpret. Peristalsis, if present, is an important but not infallible sign that there has been no significant intraperitoneal injury. On the other hand, peristalsis may be absent with a retroperitoneal hematoma, an abdominal-wall contusion or a visceral injury. An uncommon finding is an intra-abdominal mass that must be distinguished from a hematoma of the abdominal wall. When present, it indicates serious intra-abdominal injury, and there is need for early operation.

A tube should be passed into the stomach of the patient at the time of the initial examination, whenever there is a question of serious intra-abdominal injury. Fresh blood aspirated from the stomach or present in the rectum indicates probable serious injury to the gastrointestinal tract. If the patient is unable to void, a catheter should be passed. Microscopic or gross hematuria indicates contusion, but not necessarily laceration or serious injury of the urinary tract.

Intra-abdominal bleeding amounting to 1,000 ml. or more will result in a fall in the hemoglobin and hematocrit. However, hemodilution occurs at varying rates in different persons, and thus these examinations cannot be depended upon during the first six hours following injury. However, one or the other should be done at the time of the initial examination in order to obtain a baseline against which to measure the patient's subsequent course. A white blood count above 15,000/cu. mm. has been suggested as a reliable sign of serious intraperitoneal injury.[7] However, an uncertain number of hours must pass before a leukocytosis occurs, even in cases of serious intraperitoneal visceral injury. Abdominal-wall and retroperitoneal hematomas, as well as visceral injuries, may cause leukocytosis.

Most challenging is the evaluation of the unconscious patient with non-penetrating abdominal trauma. The four-quadrant peritoneal tap has its greatest usefulness in these patients. A number 18 or 20 spinal puncture needle is used. If permitted by the patient's general condition, one places him on his side so that any free fluid in the peritoneal cavity will migrate to that side. The needle then is inserted carefully through the abdominal wall in one quadrant, and then into the others if the preceding taps have been negative. Noncoagulated blood, and fluid consistent with bile, urine or intestinal contents are important in establishing a diagnosis. In the rare case of pancreatic injury, an elevated amylase content may be found. Both false-positive and false-negative taps occur. Experimental and clinical experience with the four-quadrant taps indicates that there is minimal morbidity with this procedure.[8, 9]

Free peritoneal air noted on x-ray examination of the chest or abdomen means gastrointestinal-tract laceration or rupture. The chest radiogram may show rupture of the diaphragm and pleuritis, which sometimes occur with splenic injuries. Upright and supine abdominal films should be taken. In addition to free air, intra-abdominal masses, abnormal bowel patterns, fluid, obliteration of the psoas shadow, fractures and foreign bodies may be detected. Cystourethrograms, and intravenous and retrograde pylograms are indispensable aids in the proper evalution of patients presenting the question of serious injury to the urinary tract.

TABLE I

PERCENTAGES OF PATIENTS HAVING VISCERAL INJURIES WITH ABDOMINAL TRAUMA[1]

	Penetrating	Nonpenetrating
Kidney	9.0%	13.5%
Spleen	6.0	12.6
Bladder	9.0	9.1
Jejunum-ileum	24.0	8.2
Liver	16.5	7.8
Diaphragm	10.5	3.9
Colon	19.5	3.9
Retroperitoneal Vascular	1.5	3.0
Stomach	13.5	1.3
Pancreas	1.5	0.9
Other	5.0	4.0
Single Viscus	37.3	86.1
Multiple Viscera	62.7	13.9

FREQUENCIES OF INTRA-ABDOMINAL VISCERAL INJURIES

In Table 1 are recorded the visceral injuries which Allen and Curry observed in a study of 297 patients with abdominal tramua.[1] Note the differences in incidence of specific injuries between patients with penetrating and non-penetrating trauma, and that multiple viscera were twice as often injured with penetrating as with non-penetrating trauma. Fitzgerald, Crawford and DeBakey reported the following as the order of frequency of visceral injuries: liver, spleen, small intestine, mesentery, diaphragm, colon, kidney, bladder, pancreas and inferior vena cava.[4] It is important to remember that such findings as these were determined, in part, by ecological factors.

OPERATIVE INDICATIONS

The indication for operation is usually obvious in penetrating trauma, whereas frequently it is difficult to establish in blunt or non-penetrating abdominal trauma. This difference is reflected in the varying intervals that elapse between injury and operation. The average time lapse from injury to operation in patients with penetrating abdominal trauma is about two hours, whereas in those with non-penetrating abdominal trauma it is 16 or more hours.

Absolute indications for celiotomy are: (1) an open abdominal wound; (2) pneumoperitoneum; (3) blood, bile, feces or urine on abdominal tap; (4) shock which initially responds to adequate therapy, then recurs without a satisfactory explanation; (5) traumatic diaphragmatic hernia; and (6) an intra-abdominal mass. Relative indications for operation include: (1) persistent abdominal tenderness, pain and muscle spasm; (2) progressive abdominal distention, with an absence of bowel sounds; (3) unexplained recurring anemia; (4) leukocytosis; and (5) blood in the gastric juice, urine or feces.

GENERAL OPERATIVE PRINCIPLES

Shock should be corrected before celiotomy is done. Patients sustaining this kind of trauma frequently have primary or neurogenic shock. When in doubt as to the cause, one should assume that the shock is related to blood loss. Blood should be given, or when blood is not immediately available, dextran or isotonic saline should be started. In general, the surgeon should not perform the operation until the shock has been corrected. This objective will be achieved through adequate blood replacement, unless the magnitude of the injury precludes salvage of the patient. Death occurs before effective operative intervention can take place in the rare injury causing rupture of the aorta, vena cava or other major vessel, and commonly in cases of massive liver injury.

In penetrating wounds of the abdomen, the type of incision is frequently determined by the nature of the wound. In large wounds, no incision may be necessary at all. In bullet or stab wounds, it may be possible and desirable to excise the wound.

When the findings do not permit a preoperative diagnosis, a midline incision provides the best access to all four abdominal quadrants. This incision is easily extended as needed to deal with the operative findings. Occasionally in the severely shocked patient, the greater speed with which it can be made and closed, as contrasted with a transverse incision, will increase the patient's chance for survival.

Exploration of the peritoneal cavity and its contents should be done systematically and thoroughly to avoid the tragic consequences of closing the abdomen without detecting the full extent of the injury. The surgeon must not forget that, in addition to an obvious injury encountered upon opening the abdomen, there may be additional and, though obscure, equally or more important visceral injuries. In preparing to treat some injuries, one should drain the abdomen.

Intraperitoneal chemo- and antibiotic therapy is not so effective or so safe as is the intravenous or intramuscular use of the same agents. The disadvantages of intraperitoneal therapy include the neuromuscular blockade and resulting respiratory arrest which have been noted with neomycin and other antibiotics.[10] Adequate doses of broad-spectrum antibiotics should be given parenterally as soon as the diagnosis of serious intra-abdominal injury has been made or suspected.

Necrotic or devitalized wound edges and other tissues should be excised before wound closure. Also before wound closure, the peritoneal cavity should be thoroughly irrigated with copious amounts of isotonic sodium chloride solution.

The method of wound closure is determined by the nature of the wound, the interval from injury to operation in the instance of penetrating abdominal wounds, the amount of contamination with bile, feces and foreign materials, the kind and length of the operation, and the general condition of the patient. For example, with non-penetrating trauma without contamination but with a ruptured spleen, the usual methods of wound-closure employed by the surgeon are suitable. On the other hand, in the instance of a penetrating steering-shaft injury resulting in an open abdominal wound heavily contaminated by clothing, grease, dirt and feces from the torn colon, closure with heavy interrupted stainless-steel sutures (#22) placed well back from the wound edges and going through all layers of the abdominal wall and tied loosely will provide the most secure closure with the lowest incidence of wound evisceration, and will minimize the problem of wound infection. The skin and subcutaneous tissues should be left open in a contaminated wound such as this to insure

drainage—the most important measure to prevent serious wound infection.

TRAUMA TO THE GENITOURINARY TRACT

The kidney is the solid organ most commonly injured in cases of blunt, non-penetrating abdominal trauma. All patients who have sustained abdominal injuries should have urinalyses on voided or catheter specimens. Microscopic or gross hematuria occurs in most kidney-injury cases. Insignificant trauma to the back or abdomen frequently causes minor renal contusions and hematuria. Such lesions are self-healing. Less than one-third of renal contusions require operative intervention. Intravenous and retrograde pyelograms are indicated when the patient's course suggests a more serious renal injury.[11]

The possibility of rupture of the bladder must be considered in all cases of fracture of the pelvis. Extraperitoneal rupture of the bladder is more easily diagnosed than is intraperitoneal rupture because of the frequently associated extravasation of urine over the lower abdomen, peritoneum and thighs. Urethral and prostatic rupture also cause urinary extravasation. Inability to pass a catheter into the bladder is indicative of serious injury. After urinalysis and catheterization, the cystourethrogram is the most important means of diagnosing lower urinary tract injuries. Either intra- or extraperitoneal bladder rupture is an indication for immediate surgery.[12]

Injuries to the ovaries, fallopian tubes and uterus are less common and of less significance than are those to the urinary tract. An exception is uterine injury in a pregnant woman. When the pregnant uterus has been penetrated and the membranes or the placenta has been perforated, a hysterotomy should be done and then the uterus should be repaired. Frequently, injuries to the ovaries, the fallopian tubes and the nonpregnant uterus go unrecognized, since such injuries cause no serious functional disturbance and do not threaten life.

TRAUMA TO THE GASTROINTESTINAL TRACT

It should be the objective of the physician responsible for the care of a patient with abdominal trauma to make the diagnosis of laceration or rupture of the gastrointestinal tract before the ominous and well known signs of peritonitis appear. The early signs and symptoms of such injuries may be obscure and are usually nonspecific. They include tenderness, pain, muscle spasm, absence of peristalsis, blood in the stomach or rectum, leukocytosis, blood on peritoneal tap, and most important, free peritoneal air demonstrated by x-ray examination. Much can be gained if the diagnosis can be made and surgery performed before, rather than after, peritonitis is established. The operative procedure is easier and simpler, and the prognosis is better.

At the time of celiotomy, the gastrointestinal tract from esophagus to rectum must be carefully examined. Unless the surgeon is thorough, he may well miss injuries of the posterior wall of the stomach and retroperitoneal aspects of the duodenum and colon. The highest incidence of gastrointestinal-tract tears occurs at the points of greatest fixation—the ligament of Treitz and the ileocecal junction.

The interval from injury to operation, the type of injury, the amount of contamination of the wound and peritoneal cavity with gastrointestinal contents, clothing and other foreign bodies, damage to the blood supply of the bowel and the patient's general condition—all of these determine the nature of the operative procedure. Lacerations of the stomach, jejunum and ileum, if small, are closed. If larger, they are treated by resection. Similar injuries to the large bowel may be treated in the same way, but a proximal protective colostomy is often indicated. The seriousness of a leak into the peritoneal cavity increases as one proceeds distalward in the gastrointestinal tract. Bowel with an inadequate blood supply must be resected. In the small bowel, an end-to-end anastomosis should usually be done, but frequently in the large bowel the formation of a colostomy is a wiser procedure.

Careful cleansing of the peritoneal cavity at the end of the operation and before the wound is closed is of great importance. The peritoneal cavity should be irrigated with copious amounts of saline after necrotic tissue, feces, blood clots and foreign bodies have been removed. When a questionable suture line has been left, as is sometimes necessary, a Penrose drain should be brought to the outside from the area in question through a separate stab wound in the abdominal wall. In instances of injuries of the colon, a Milsulicz type of exteriorization is occasionally the operation of choice. Intragastric—or better, long-tube small bowel—suction is a vital part of the postoperative care of the patient with major trauma to the gastrointestinal tract.

TRAUMA TO THE LIVER

There are no signs pathognomonic of liver injury. The highest frequency of liver injury is seen with trauma to the lower part of the chest and the upper portion of the abdomen. Shotgun blasts and blunt trauma cause fragmentation and serious liver damage. Bullet and stab wounds of the liver are usually less serious. Occasionally, in order to expose and treat a liver injury, a thoraco-abdominal approach is necessary. In at least 50 per cent of lacerations of the liver, bleeding will have stopped by the time of exploration. About 10 per cent of patients with trauma to the liver will die, most often because of uncontrolled hemorrhage. The liver is the organ most commonly injured in cases of fatal, non-penetrating trauma.[4] Active bleeding should be controlled by direct ligation of bleeding

points, when possible. Pledgets or packs of Gelfoam, deeply-placed mattress sutures, temporary gauze packs, and total or partial lobectomy are less desirable methods which sometimes must be used. Mattress sutures devitalize tissues, cause slough, necrosis and bile leaks, and promote infection and secondary hemorrhage. Rarely, it is necessary to leave a gauze pack in place at the end of the operation, to be removed later during the postoperative period. This procedure greatly enhances the chance of serious postoperative infection. Most patients who have sustained severe enough fragmentation injuries to require partial or total hepatic lobectomies do not survive long enough for the procedure to be performed. Adequate drainage using Penrose drains, sometimes through multiple stab wounds, is essential to prevent pooling of bile and blood, and the resultant abscess formation and peritonitis. All necrotic and devitalized liver tissue should be debrided.[13]

TRAUMA TO THE SPLEEN

Less than 25 per cent of patients with ruptured spleens will have the classic shoulder-tip pain. There are no other pathognomonic signs or symptoms, however.[14] The highest incidence of splenic injuries occurs with trauma to the upper half of the abdomen and to the left lower chest, particularly with fractures of the ninth, tenth and eleventh ribs on the left. However, less than 10 per cent of such fractures are associated with splenic damage. X-ray examination may reveal immobility of the left hemidiaphragm. When there has been substantial hemorrhage, with hematoma formation, distortion of the stomach and colon may be apparent. A day or so after such bleeding, a left basal pleuritis may occur. Provided that the needle is inserted into the correct area, a bloody peritoneal tap will be obtained.

Late bleeding from the spleen—frequently subtle—has been observed as long as 30 days after injury.[15] Death from exsanguination may occur before a diagnosis has been established. This hazard emphasizes the importance of carefully observing the patient following abdominal trauma. Frequent pulse, blood-pressure, and hemoglobin or hematocrit determinations must be made. The most reliable indication of late splenic bleeding is the recurrence of shock (though it originally responded to adequate blood replacement) associated with an unexplained fall in hematocrit or hemoglobin.

Since the treatment of splenic injuries by splenectomy is so satisfactory, as contrasted with the morbidity and mortality associated with the treatment of liver injuries, there is greater urgency in making the diagnosis. Because of this and because of the low mortality rate associated with splenectomy, it is better to perform an occasional negative exploration than to miss a ruptured spleen in a patient with an equivocal diagnosis.

OTHER TYPES OF INTRA-ABDOMINAL INJURIES

As suggested by the findings in Table 1, other kinds of visceral trauma occur less frequently than those specific kinds that have been discussed. However, this does not permit the physician to rule out the less common injury which, in his patient, may be of equal gravity. Rare injuries to the gallbladder and the extrahepatic bladder system are suggested by a drainage of bile from a penetrating wound, or by bile noted at the time of exploration in the absence of liver laceration. The gallbladder should be removed if it has been injured. The common duct should be repaired or sidetracked, as determined by the nature of the injury.[16] Injuries to the tail or to the body of the pancreas may require partial pancreatectomy.[17] A preoperative amylase determination done on peritoneal fluid may be helpful in establishing a diagnosis of injury to the pancreas. However, blood amylase elevations also occur secondarily to abdominal trauma, without pancreatic injury.

Traumatic herniation of the diaphragm may be suspected on the basis of a respiratory difficulty and the physical signs. The diagnosis will be established by roentgenographic examination of the chest and the abdomen. When this diagnosis has been established, operation should be undertaken promptly, the herniated viscera should be reduced, and the diaphragmatic defect must be repaired.[18]

Retroperitoneal hematomas associated with vascular and renal injuries, vertebral fractures or otherwise uncomplicated trauma frequently cause ileus which is sometimes difficult to differentiate from the peritonitis that occurs secondary to gastrointestinal-tract injuries. X-ray examination usually reveals obliteration of the psoas shadow. The competent surgeon must accept the fact that he will perform celiotomy in some abdominal trauma patients in whom the only operative finding will be a retroperitoneal hematoma. Bleeding into the rectus sheath, with the formation of a hematoma is uncommon, but is sometimes confused with intra-abdominal injury.[19]

At the time of celiotomy, the surgeon must keep in mind the possibility of a disorder antedating the trauma, which may complicate the operative findings. Examples are peptic ulceration, cirrhosis with portal hypertension, neoplasms of the stomach and colon, or a large spleen in a patient with leukemia.

MORTALITY

The mortality rate of abdominal trauma as reported by various authors is surprisingly consistent at about 14 per cent.[1, 2, 5, 6, 9] Some patients are so severely injured that they cannot be saved, regardless of how able the medical care, but other patients with minimal abdominal injuries will survive in spite of inadequate care. Preventable mortalities occur in a third group of patients with abdominal injuries of intermediate severity. Late

and inadequate treatment of shock are important causes of preventable deaths in the abdominal-trauma victims. Delay in diagnosis and the resulting delay in surgery can likewise result in a preventable death. The examining physician should err on the side of overestimating, rather than underestimating, the severity of the injury.

Another "correctable" cause of death is failure, because of incomplete or inadequate examination, to detect and treat associated injuries, before and during operation. Avoidable death may also occur because the patient is not observed closely enough, after the initial examination, to detect the ominous signs of recurring hemorrhage or developing peritonitis. Poor judgment at the time of operation leads to improper, inadequate treatment, and perhaps death.

The trite admonition "It is better to look see than to wait see" is worth remembering when one is dealing with the abdominal-trauma victim.

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WHITE HOUSE CONFERENCE ON AGING

The liberals screamed that the White House Conference on Aging was "stacked," but they failed to point out that the session was rigged from the very beginning to produce exactly what they wanted.

Dr. Morton Leeds, of Indianapolis, found out that he was not supposed to vote on any of the proposals made at the Conference. He made the mistake of thinking that an official delegate had some voice in what was to happen, and asked for a ballot by the 2,475 registered participants in the meeting.

According to a ruling by Robert W. Kean, conference chairman, the only way such a vote could be held was to obtain the approval of two-thirds of the delegates. At the time he made this ruling, there were considerably less than the 1,650 delegates in the hall. However, Kean whacked the gavel and announced that "1,650 having voted, I declare the motion lost." Neither Dr. Leeds nor any other maverick delegate was going to interfere with the smooth course of events at that Conference, even if it took the public declaration of an obvious untruth.

Later, the Conference was faced with two reports on the question of whether a health insurance plan should be tied to higher Social Security taxes. One section reported that this system should be used. Another section of that same Conference came in with exactly the opposite idea—that Social Security should not be used. The Conference chairman then directed those who wanted a voluntary system to withdraw their proposal.

In case you might have missed it, we will point out that the section with the "wrong" report wasn't asked to reconsider its ideas or file a dissenting opinion. In so many words, the section which refused to be "stacked" by the big-government liberals was told to shut up and sit down.

The rest of the nation might well ask what sort of representative this Conference was, and for what reasons it was called together. In the light of these facts, the 2,475 delegates were nothing more than so many stage-props to be shoved around by the liberals, such as Kean and Prof. Wilbur Cohen.

It is a curious commentary on the liberal belief in democracy when an open discussion of the real question before the delegates was not permitted at this Conference. There is something wrong when the delegates at such a Conference can't vote on the central issue at stake.

The nation should be spared in the future the expense attendant on such phony conferences. A routine hand-out from Prof. Cohen's office would have served the same purpose, at considerably less cost to the taxpayers.

—INDIANAPOLIS STAR
January 20, 1961

Malignant Lymphoma

ELWOOD BUCHMAN, M.D., and DAVID T. KAUNG, M.D.

IOWA CITY

MALIGNANT LYMPHOMA is a neoplasm arising from lymphoid tissues. This report reviews our experience with this disease as seen in a general medical and surgical, university-affiliated Veterans Administration Hospital. We observed 80 cases of malignant lymphoma in 25,337 hospital admissions during the period from March, 1952, through December, 1958, an incidence of 0.32 per cent.

HISTOLOGIC CLASSIFICATION

For simplicity, we have utilized the classification of Gall and Mallory, slightly modified, in an effort to predict the course and prognosis of this disease.[1] This classification of malignant lymphoma, based on histological structure, includes the following five types: (1) reticulum cell sarcoma, (2) Hodgkin's disease, (3) lymphoblastic lymphoma, (4) lymphocytic lymphoma, and (5) giant follicular lymphoma. The breakdown of our cases into these types is shown in Table 1.

TABLE 1

HISTOLOGIC CLASSIFICATION

Reticulum cell sarcoma	21 Cases
Hodgkin's disease	30 Cases
Lymphoblastic lymphoma	15 Cases
Lymphocytic lymphoma	9 Cases
Giant follicular lymphoma	5 Cases
Total	80 Cases

Usually, reticulum cell sarcoma and lymphoblastic lymphoma are more malignant and run a shorter course. Lymphocytic and giant follicular lymphomas are usually more benign than the others. Giant follicular lymphoma often changes to more malignant forms. The prognosis of Hodgkin's disease is variable.

The general features of all five histological types include an overgrowth of cells of the lymphoid series, with an exaggeration or obliteration of the nodal architecture, a crowding of the peripheral sinus, and an infiltration of the capsule. In addition to general features common to all five types, each one has more specific findings.

In a general way, the distribution among the cell groups in the present series agrees well with Gall and Mallory's figures. Hodgkin's disease was by far the most frequently occurring type of malignant lymphoma. Least common in both series was giant follicular lymphoma.

CLINICAL CLASSIFICATION

In 1950, Peters classified Hodgkin's disease according to the extent of organ involvement.[2] We have used her classification, with minor modifications (Table 2). It is felt that this classification correlates better with prognosis and with the type of treatment used than does the histologic classification.[3] More recently, there has been a trend to use Peters' classification not only for Hodgkin's disease but for all the malignant lymphomas.[4, 5]

TABLE 2

CLINICAL CLASSIFICATION

I. Disease limited to a single organ or lymph node region. No constitutional symptoms or signs.
II. Diseases limited to two adjacent lymph node regions with or without constitutional symptoms or signs.
III. Generalized lymph node or multiple organ involvement with or without constitutional symptoms or signs.

In our series, 55 of the 80 cases were in Class III when first seen. Fifteen were in Class I, and 10 were in Class II. The data supporting the clinical classification of all lymphomas are still sketchy, and it is probably advantageous to use both clinical and histologic classifications.

AGE AT ONSET

Our patients fell into two main age groups as regards age at onset of illness. One peak occurred in the 25-34 year range, and a second in the 55-64 year span. Actually, these peaks coincided well with the peaks in the age distributions of patients in this hospital and in Veterans Administration hospitals throughout the rest of the country. In Gall and Mallory's series, the average age was 42.5 years, and the median age was 44 years for the entire group, though Hodgkin's disease occurred about 10 years earlier than did the other lymphomas. Patients in Jackson and Parker's series had their onsets of disease at approximately the same ages as did the members of our group.[6]

PRESENTING COMPLAINTS

Half of the patients complained of lymphadenopathy upon entrance (Table 3). Cervical node enlargement was highest in frequency. Weakness,

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TABLE 3

PRESENTING COMPLAINTS

Lymphadenopathy		40
Cervical	24	
Inguinal	9	
Axillary	4	
Others	3	
Weakness		10
Shortness of breath		11
Chest pain		10
Abdominal pain		9
Weight loss		8
Back pain		7
Fever		5
Cough		3

shortness of breath and chest pain were common complaints. Other presenting symptoms included abdominal pain, weight loss, back pain, fever, and cough. It is evident that early diagnosis depends upon a prompt and critical evaluation of lymph nodes. The other symptoms are non-specific.

PHYSICAL FINDINGS

In the majority of patients (68 of the 80), lymphadenopathy was evident when they were first examined (Table 4). Most showed cervical node enlargement, although axillary, inguinal, mediastinal and hilar gland enlargement were noted in some of them. Hepatomegaly was found in 29 patients, and splenomegaly in 15. A somewhat unexpected observation was pleural effusion —found in 12 patients. A high incidence of pleural effusion in lymphoma was also reported by Gall and Mallory. Fever was present in only six of our patients when they were first seen. Parenchymal

TABLE 4

PHYSICAL FINDINGS

Lymphadenopathy		68
Cervical	54	
Axillary	41	
Inguinal	39	
Mediastinal, Hilar	27	
Abdominal	11	
Epitrochlear	4	
Tonsillar	1	
Hepatomegaly		29
Splenomegaly		15
Pleural effusion		12
Fever		6
Lung involvement		6
Skin involvement		5
Neurological involvement		4
Jaundice		3
Gastrointestinal involvement		2
Rib involvement		2

lung involvement was detected in six individuals, and rib involvement in two. Three patients were clinically jaundiced.

LABORATORY FINDINGS

The peripheral leukocyte count was within the normal range in more than half of the patients (Figure 2). Two individuals presented with white blood cell counts of less than 2,000, and two had counts of over 20,000/cu. mm. Mild anemia was common. More often than not, these findings were not diagnostically helpful.

Bone marrow aspirations were completed in 50 of the 80 patients in this study. In 27, the marrow was normal. It was non-diagnostic in six. Ery-

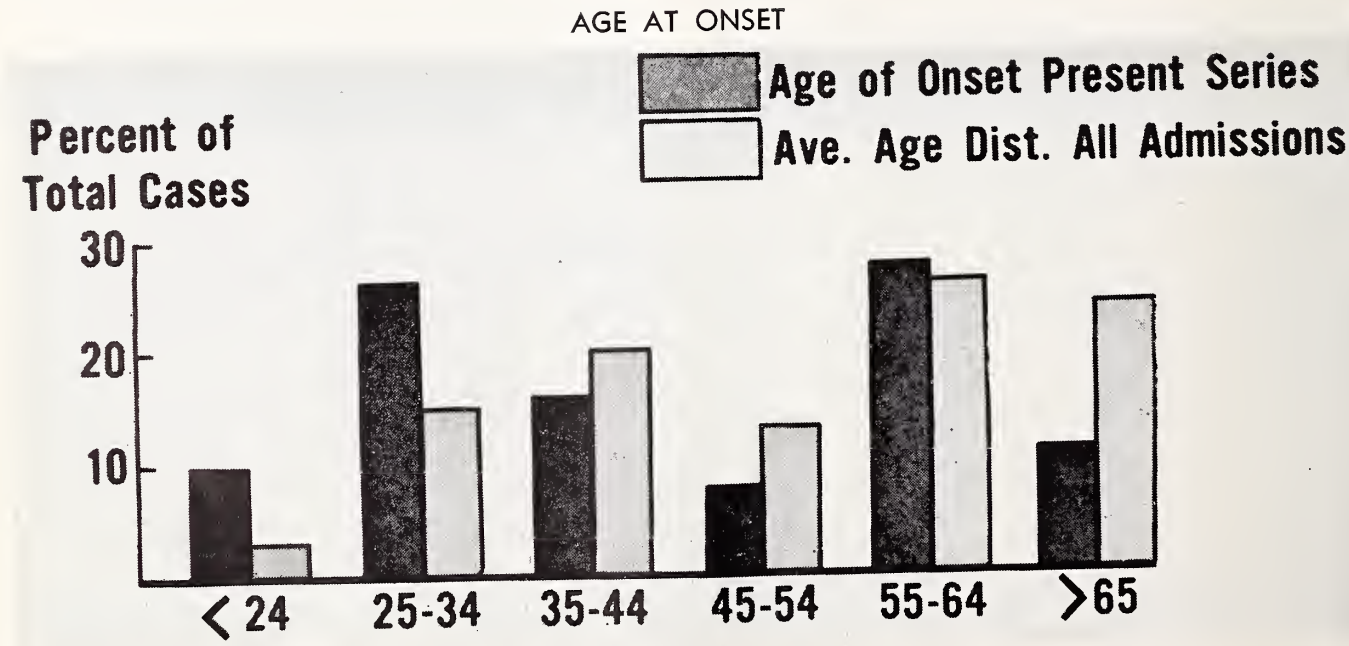

Figure 1

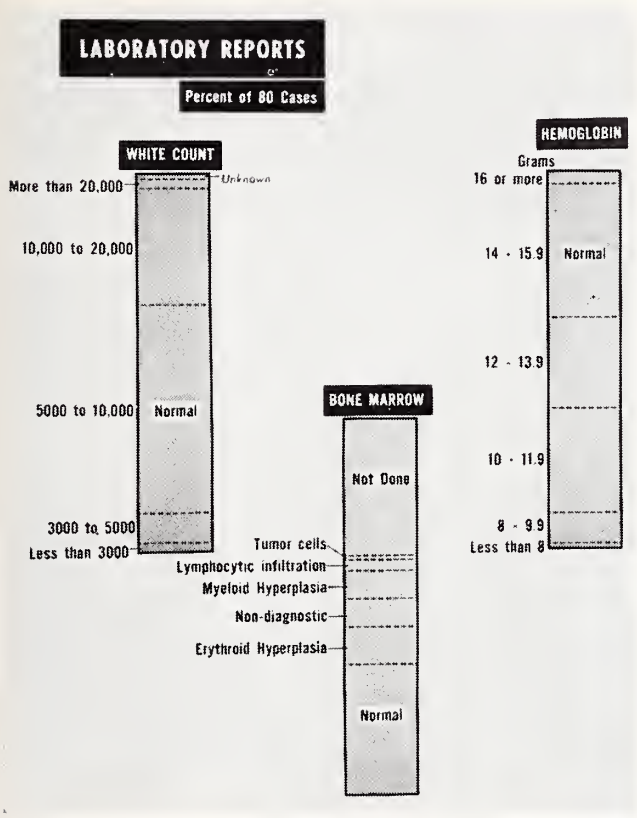

Figure 2

throid hyperplasia was seen in eight, myeloid hyperplasia in six, and lymphoid infiltration in two. Although examination of the bone marrow aided diagnosis but little, it was invaluable in deciding whether the patient could take further x-ray treatment or chemotherapy.

TISSUE DIAGNOSIS

Approximately half of the patients with malignant lymphoma (42 of 80) had symptoms for less than three months before a diagnosis was made

TABLE 5

TISSUES PROVIDING DIAGNOSIS

Lymph Nodes	68
Cervical	41
Axillary	13
Abdominal	5
Inguinal	3
Mediastinal	2
Retroperitoneal	2
Epitrochlear, femoral	2
Skin	2
Maxillary Sinus	1
Ileum	1
Stomach	1
Bronchus	1
Colon	1
Unspecified	1
Diagnosis at Autopsy	4

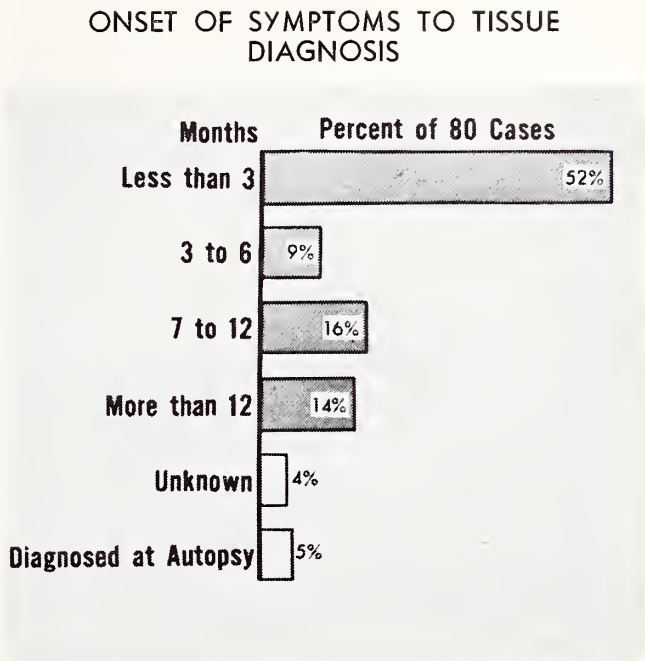

Figure 3

histologically. For the others, many months elapsed before a definite diagnosis was established (Figure 3). It is felt that earlier diagnosis and then treatment might have resulted in a better prognosis, as Peters has suggested.[2, 3]

As one would have expected, the lymph nodes led to the diagnosis in the vast majority of instances (Table 5). In half of the patients, cervical nodes were diagnostic for malignant lymphoma. Other nodes were biopsied less frequently. There may be a need for laparotomy when abdominal nodes are suspected. In a recent report from the Mayo Clinic, 70 patients with fever of obscure origin lasting over two weeks had exploratory laparotomies.[7] One-seventh (10 patients) of those explored were found to have lymphomas.

TREATMENT

In general, the treatments commonly employed today (Table 6) have been linked with the clinical classifications outlined in Table 2. Class I disease is ordinarily treated with "curative" x-ray or surgery, and Class II and Class III lesions are treated with palliative x-ray and/or chemotherapy. Steroids are often employed, especially when hemolytic anemia is a complication of the disease.

Irradiation with x-ray was used in 64 patients (Table 7). This has proved to be the most useful form of therapy, either alone or in combination

TABLE 6

GENERAL PRINCIPLES OF TREATMENT

Class I.	Curative X-ray or surgery.
Class II.	Palliative X-ray, N_2H.
Class III.	Palliative X-ray, N_2H. Hemolytic anemia—steroids.

TABLE 7

FREQUENCY OF AGENTS USED

X-ray	64
N_2H	38
Steroids	23
Surgery	8
TEM	2
Chlorambucil	2
P^{32}	1

with other agents. Nitrogen mustard (N_2H) was given intravenously to approximately half of the patients. Steroids were administered less frequently. Less common treatments included surgical excision, triethylene melamine (TEM), chlorambucil and P^{32} (Table 7).

COMPLICATIONS

In 11 of the 80 patients, hemolysis was considered a complication of the malignant lymphoma, and in six of them it was definitely proved by an elevated indirect serum bilirubin, reticulocytosis, shortened erythrocyte survival as indicated by Cr^{51} tagging, and frequent transfusions in the absence of bleeding. Five cases of probable hemolysis were diagnosed on the basis of the need for moderately frequent transfusions, in the absence of bleeding. In a similar number of patients, significant bleeding was prominent in the observed course of the disease (Table 8).

Pleural effusion developed in 10 patients, and ascites was present in four. Jaundice was noted in nine individuals. Herpes zoster was seen in five patients. Superior and inferior vena caval obstruction developed in two patients each.

Leukemia developed in four of the 80 patients (5 per cent), with chronic lymphatic leukemia in two and "leukosarcoma" in two. The term *leukosarcoma* refers to the leukemic phase of lymphocytic and lymphoblastic lymphoma.

TABLE 8

COMPLICATIONS

Hemolysis		11
Definite	6	
Probable	5	
Bleeding		11
Pleural effusion		10
Jaundice		9
Leukemia		4
Chronic lymphocytic leukemia	2	
Leukosarcoma	2	
Herpes Zoster		5
Ascites		4
Sup. v.c. obstruction		2
Inf. v.c. obstruction		2
Diabetes		1
Cord compression		1
Uremia		1

IMMEDIATE CAUSE OF DEATH

In approximately half of the patients, death followed a variable period of extreme anorexia, marked weight loss, apathy and loss of strength (Table 9). Sudden death rarely occurred. The exact mode of death depended on the organs involved, secondary infections, degree of anemia, treatment, and unknown factors such as the patient's "resistance." In seven cases, pneumonia was an important cause of death. In three patients, severe hemorrhage (cerebral in two and duodenal in one) led to death. Associated infections were part of the fatal episode in three patients—Cryptococcus in two, and Clostridium welchii in one.

TABLE 9

IMMEDIATE CAUSE OF DEATH

Lymphoma, cachexia		38
Pneumonia		7
Hemorrhage		3
Cerebral	2	
Duodenal	1	
Cardiac diseases (un-related)		2
Pancytopenia or anemia		3
Respiratory failure (post-irradiation)		2
Adrenal insufficiency		1
Bacteremia, E. coli		1
CNS involvement		1
Inf. v.c. obstruction		1
Generalized herpes and infection		1
Hypoglycemia (diabetic)		1
Perforation of duodenum		1
Associated infections:		
Cryptococcus		2
Cl. welchii		1

TABLE 10

AUTOPSY FINDINGS (39 CASES)

Lymph Nodes	21	Small intestines	9
All peripheral	14	Colon	8
Retroperitoneal	15	Thyroid	7
Mediastinal	9	Duodenum	7
Abdominal	8	Esophagus	5
Cervical	4	Pericardium	4
Inguinal	3	Heart	5
Axillary	2	Spine	4
Hilar	2	Diaphragm	4
Spleen	27	Dura	3
Liver	25	Pleura	3
Lungs	16	Skin	3
Kidneys	14	Gallbladder, Pituitary, Ribs	2 ea.
Bone Marrow	14	Peritoneum	1
Pancreas	16	Testes	3
Adrenals	13		
Stomach	11		

AUTOPSY FINDINGS

Sixty of the 80 patients have died. Of the 50 patients who died in the hospital, autopsies were obtained in 39, giving an autopsy percentage of 78 per cent (Figure 4). Table 10 lists the tissues involved with lymphoma at the postmortem examinations. Lymph nodes were diseased in over half of this group. Hepatic and splenic involvements were common. Infiltration was frequently noted in the intestinal tract. These observations amply justify the conclusion that lymphoma is a widespread systemic disease. This accounts for its protean clinical picture.

SURVIVAL

Of the 60 patients with maligant lymphoma who died, four were initially diagnosed at autopsy. Slightly fewer than half of this group died within a year after their diagnoses had been established. The remaining deaths occurred gradually over the next several years. All of the 60 who died had succumbed by the tenth year after the diagnosis of malignant lymphoma was made (Figure 5).

ADDITIONAL COMMENTS

Tumors of the lymphoid tissues have been given a host of names, such as *lymphoblastoma, malignant lymphogranuloma, lymphosarcoma, Hodgkin's disease* and *reticulum cell sarcoma,* and a most confusing situation has resulted.[8] It is difficult to unscramble the different terms in the literature. In recent years, the trend has been to use *malignant lymphoma* as an all-inclusive generic term, and to use the five subtypes, on the basis of their differing histologic appearances as noted previously.

It is interesting to note the relative persistence of a given histologic type. In 56 of the cases reported by Gall and Mallory, histologic tissues were obtained on two occasions at least one month apart. In 76.8 per cent of those cases, the original histologic structure remained the same, and only 23.2 per cent showed dedifferentiation. In our group of patients, 49 had tissues obtained on different admissions, and 28.5 per cent of them had changes in tissue diagnosis. On follow-up, one lymphocytic and lymphoblastic lymphoma developed lymphocytic leukemia. Two patients with lymphoblastic lymphoma had developed "leukosarcoma." Lesser degrees of dedifferentiation had also occurred (Table 11). Certainly, detection of histologic changes would depend, in part, on the frequency of tissue biopsies.

Writers, in general, agree that not only is the histologic type of major importance in the prognosis, treatment and course of malignant lymphoma, but the clinical class into which the patient falls when first seen is of equal importance. It is also felt that the earlier treatment is given, and the more localized the disease, the better is the prognosis. Thus, in a review of Hodgkin's disease treated by irradiation, Peters[2, 3] reported a five-year survival of 71 per cent for patients whose disease was in Class I; of 56 per cent for those in Class II; and 15 per cent for patients with widespread disease (Class III). The 20-year survival in her series was 33 per cent for Class I; 37 per cent for Class II; and zero per cent for Class III. Shimkin and associates[9] reviewed 215 patients with lymphosarcoma. This group included lymphoblastic, lymphocytic and reticulum cell sarcomas, but excluded Hodgkin's disease. The patients

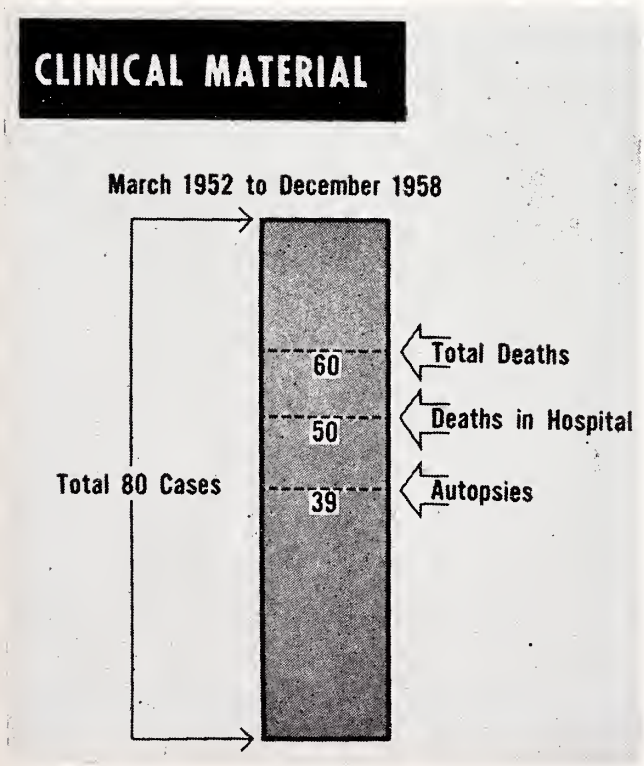

Figure 4

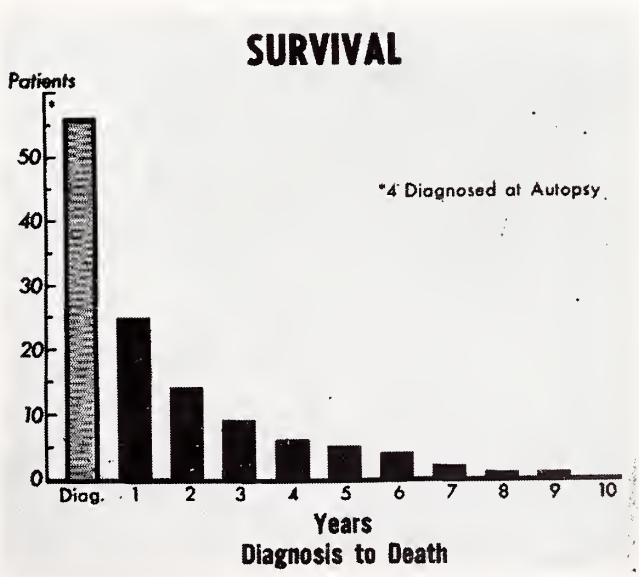

Figure 5

TABLE II

DEDIFFERENTIATION OF MALIGNANT LYMPHOMA

Giant Follicular Lymphoma (4)	
1 → Reticulum cell sarcoma	
1 → Reticulum cell sarcoma	→ Lymphoblastic lymphoma
1 → Lymphocytic lymphoma	→ Reticulum cell sarcoma
1 → Hodgkin's Disease	
Lymphocytic Lymphoma (1)	→ Chronic lymphocytic leukemia
Lymphoblastic Lymphoma (3)	
2 → Leukosarcoma	
1 → Chronic lymphocytic leukemia	
Reticulum Cell Sarcoma (3)	
1 → Lymphoblastic lymphoma	
1 → Hodgkin's Disease	
1 → R. E. hyperplasia	
R. E. Hyperplasia (2)	
1 → Lymphocytic lymphoma	
1 → Lymphoblastic lymphoma	

with visceral involvement did worse than the other groups with peripheral nodes.

Nice and Stenstrom,[10] in summarizing 208 patients with Hodgkin's disease treated by irradiation, found a five-year survival of 85 per cent in Class I disease; 90 per cent in Class II; and 10 per cent in Class III. The 10-year survivals were 77, 35 and 2 per cent, respectively. Shimkin and colleagues, reporting on 254 cases of Hodgkin's disease, also found that survival correlated better with the stage of the disease than did the histology.[11] Jelliffe's series of 227 cases of Hodgkin's disease[12] dictated a similar conclusion.

Gall and Mallory found that 38 per cent of their cases of lymphoblastic lymphoma showed a leukemic blood picture at some time during the course of the disease. Similarly, 48 per cent of lymphocytic lymphomas became leukemic. Berman[13] noted the association of leukemia in over 50 per cent of lymphoblastic lymphomas, and very often in cases of lymphocytic lymphoma. Other types showed less tendency toward a leukemic picture.

In the present series, leukemia occurred in 20 per cent of the lymphoblastic and in 11 per cent of the lymphocytic lymphomas. This finding raises the question of whether there is any basic difference between the lymphomas and the associated leukemias. Histologically, they are closely related. There appears to be no difficulty in identifying chronic lymphocytic leukemia when mature lymphocytes begin to predominate in the peripheral blood of a case previously non-leukemic. When lymphoblasts appear in the peripheral blood, the case may be interpreted as leukosarcoma, lymphosarcoma cell leukemia, acute lymphoblastic leukemia, or even chronic lymphocytic leukemia. The confusion in terminology results from possible morphologic differences between the circulating lymphoblasts from a lymphoblastic lymphoma, and the lymphoblasts of acute leukemia.[14] Clinically, it is not clear whether the differentiation is of practical value as regards prognosis and therapy.

SUMMARY

Malignant lymphoma is a neoplasm arising from lymphoid tissues. Eighty cases of malignant lymphoma have been diagnosed in 25,337 hospital admissions, representing an incidence of 0.32 per cent.

It is our impression that a clinical classification correlates better with prognosis and available therapy than does the histologic type of the tumor. In our series, 55 of the 80 patients were in Class III when first seen; 15 were in Class I; and 10 were in Class II.

Half of the patients complained of lymphadenopathy upon admission, but other symptoms were non-specific. Sixty-eight of the 80 had lymphadenopathy when first examined, with cervical node enlargement in four-fifths of these. Axillary, inguinal, mediastinal and hilar gland enlargement were also frequently encountered. Twelve of the 80 patients were found to have pleural effusion.

Laboratory findings were generally not helpful in arriving at the diagnosis. The bone marrow aspiration was a valuable aid in deciding upon the advisability of further chemotherapy or x-ray treatment.

Over half of the patients had symptoms for less than three months before a diagnosis was made histologically. Microscopic section of a lymph node led to accurate diagnoses in 68 of the 80 patients. Laparotomy was occasionally a helpful diagnostic procedure.

Clinical Class I cases were ordinarily treated with "curative" x-ray or surgery, and Class II and Class III cases with palliative x-ray and/or chemotherapy. Steroids were useful for the hemolytic anemia that was occasionally seen. Other therapies included triethylene melamine, chlorambucil and P^{32}.

Complications included hemolysis in 11 of the 80 patients, bleeding in 11, pleural effusion in 10, jaundice in 9, leukemia in 4, herpes zoster in 5, ascites in 4, and superior and inferior vena caval obstruction in 2 patients each.

Sixty of the 80 patients died. Autopsies were performed on 78 per cent of those who died in the hospital. Thirty-eight died mainly from profound cachexia. Practically all tissues were found involved, accounting for the protean clinical picture. All of the 60 who died succumbed by the tenth year after diagnosis.

From 49 patients tissues were obtained on different admissions, and in 28.5 per cent of these the histologic tissue type changed. Two patients each

developed chronic lymphocytic leukemia and "leukosarcoma." The relationship of malignant lymphoma to leukemia has been discussed.

ACKNOWLEDGEMENT

Our deep appreciation is extended to Dr. Kenneth R. Cross, chief of the Laboratory Service, for descriptions of histological types of malignant lymphoma.

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Chronic Lymphocytic Leukemia

A Clinical Study of Thirty-five Cases

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IOWA CITY

A SURVEY OF THE medical literature on the clinical aspects of chronic lymphocytic leukemia in the past two decades reveals interest almost exclusively in methods of therapy and their effect on survival. Although excellent descriptions of the disease are readily available in the standard textbooks on hematology, an understanding of the clinical spectrum still requires a systematic review of one's experience with the disease. Toward that end, a study was made of all cases of chronic lymphocytic leukemia admitted to the Iowa City Veterans Administration Hospital.

CLINICAL FEATURES

From the opening of this hospital in March, 1952, to the end of 1958, a total of 35 cases of chronic lymphocytic leukemia were seen. These represented 0.138 per cent of all admissions during that period of time. The diagnosis of chronic lymphocytic leukemia usually offered no difficulty. Almost all of the cases showed relative and absolute lymphocytosis in the peripheral blood. The lymphocytes were mature and remarkably similar in appearance. Three cases were subleukemic, and the diagnoses were confirmed by bone-marrow biopsies and clinical courses. The presence of lymphocytosis of both the peripheral blood and bone marrow differentiated these patients from cases of lymphocytic lymphoma which were aleukemic at the time of diagnosis. Since some of the latter cases do become leukemic, the differentiation may be entirely arbitrary.

Age at Onset. The ages at onset, divided into decades, are shown in Figure 1. The peak age incidence occurred in the sixth and seventh decades of life. Obviously, this is a disease of later life. Although our peak incidence corresponded with that of all the veterans admitted to the hospital during the same period, this age incidence is also in general agreement with that noted by Shimkin,[1] Scott,[2] and Pisciotta *et al.*[3] Since the proportion of aged individuals in the population is increasing, the numbers of cases of chronic lymphocytic leukemia have been observed by many to be on the rise.

Presenting Complaints. The commonest complaint of this group of patients was weakness and fatigue. Table 1 shows that it was present in 48.5 per cent of the cases. This was usually unassociated with any significant degree of anemia. Other reported series have shown the incidence of this complaint to vary from 25 to 90 per cent of cases.[2-6] Of the 31 patients who exhibited lymphadenopathy on admission only four mentioned it as a presenting complaint. One-fourth of the patients

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TABLE 1
PRESENTING COMPLAINTS*

Weakness, Fatigue	17
Non-related	9
Adenopathy, cervical	4
Fever	3
Weight Loss	3
Dermatitis	2
Anemia	2
Shortness of Breath	2
Chest Pain	2
Pruritus	1
Abdominal Swelling	1
Leg Pain	1

* Some patients had more than one presenting complaint.

TABLE 2
PHYSICAL FINDINGS

Adenopathy		31*
Axillary	29	
Cervical	25	
Inguinal	25	
Hilar, mediastinal	4	
Tonsillar	1	
Abdominal	1	
Epitrochlear	1	
Hepatomegaly		19
Splenomegaly		16
Pleurisy, effusion		4
Fever		3
Edema of legs		2
Leukemia cutis		1
Herpes zoster		1

* In some patients, more than one group of lymph nodes showed involvement.

had complaints unrelated to chronic lymphocytic leukemia. In those, the diagnosis was made after routine blood examinations. Some of those cases represented early stages of the disease, as described by Wintrobe.[7] Others belonged to a more chronic group of patients who ran a relatively benign course.

Physical Findings. Almost all patients had lymphadenopathy judged significant by the examiner (Table 2). The high incidence of axillary lymphadenopathy seems significant, since these nodes are usually not enlarged in healthy individuals. Minor degrees of cervical or inguinal node enlargement are more difficult to interpret. Unfortunately, precise measurements were seldom applied to the nodes involved. Such data would certainly facilitate more objective evaluation of the nodes on admission and during the course of the disease. The nodes were usually asymptomatic, discrete and freely movable. Biopsies revealed findings indistinguishable from those of the lymphocytic type of malignant lymphoma.

Hepatomegaly and splenomegaly were present in about half of the cases. By and large, the physical findings were remarkably similar to those of a

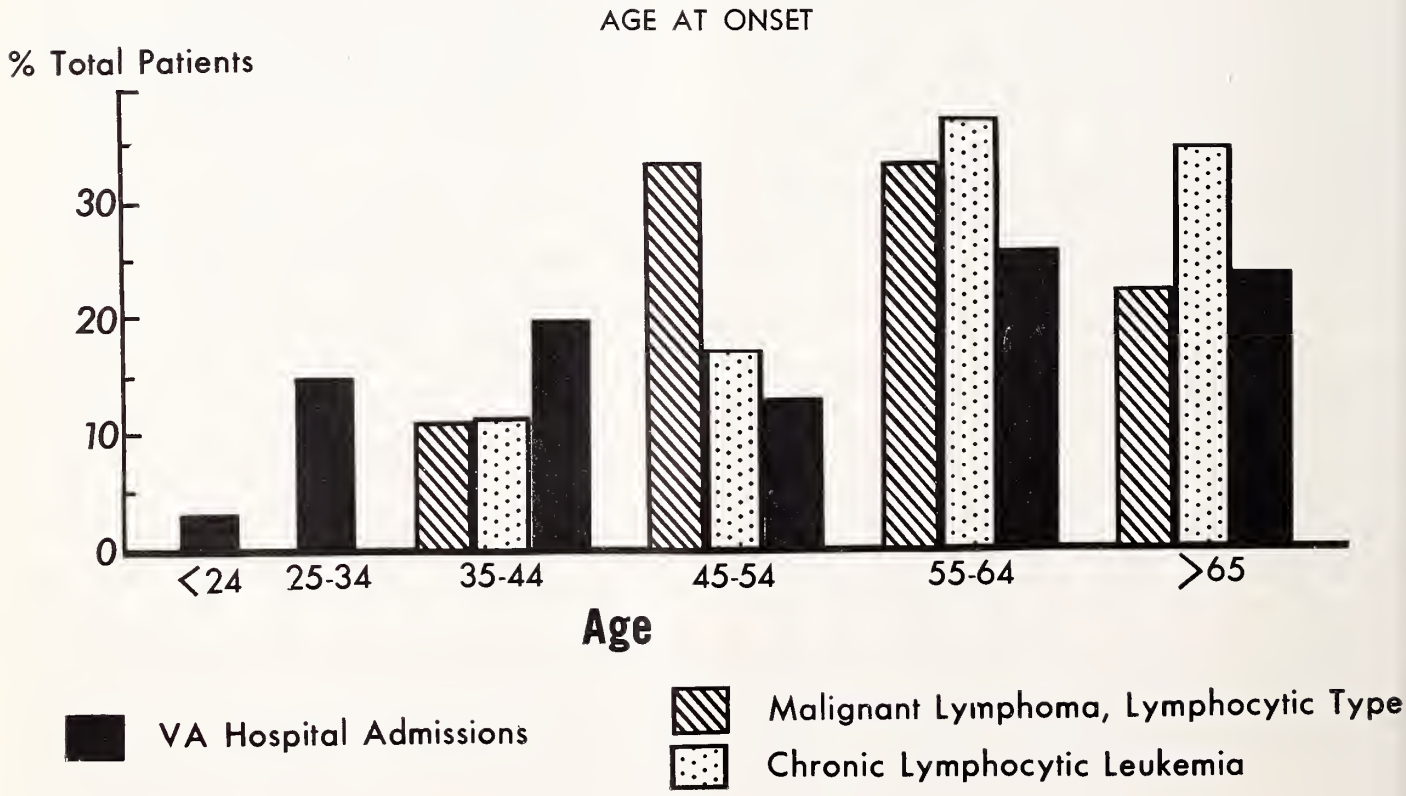

Figure 1

group of malignant lymphomas previously reported from this hospital.[8]

Laboratory Findings. The total leukocyte count in five patients was less than 10,000 (Table 3). Two of these had both an absolute and a relative lymphocytosis, and the other three had only a relative lymphocytosis (Table 4). The majority of the patients had initial total leukocyte counts ranging between 10,000 and 100,000. Hemoglobin values were mostly normal, or only slightly below normal. Of the five patients with admission hemoglobin values of less than 8.0 Gm., three had evidences of hemolytic anemia. One patient did not have adequate studies to establish the presence of hemolysis until a later admission. The bone-marrow findings were confirmatory in almost all cases. One patient had only focal lymphocytosis in the marrow. This probably represented an early change in chronic lymphocytic leukemia, as described by Hougie.[9] One bone marrow was interpreted as showing only "slight lymphocytosis." This relatively normal bone marrow was probably induced by x-ray therapy, which the patient had had to the mediastinum shortly prior to admission.

Duration of Symptoms Prior to Diagnosis. This is often a guess. Many patients were totally unaware of their disease. Some complaints were difficult to ascribe to chronic lymphocytic leukemia. The duration was unknown or uncertain in 14 patients (Table 5). Sixteen patients sought medical aid within one year after the onset of their symptoms.

Complications. Table 6 represents the complications which developed in the course of the disease. Nine patients had definite evidences of hemolysis —elevation of unconjugated bilirubin in the serum, reticulocytosis, rapidly developing anemia, and shortened survival of Cr^{51}-tagged red cells in the absence of external blood loss. The probable cases of hemolysis represent instances of fairly rapidly developing anemia (in the absence of external blood loss), but without adequate confirmatory laboratory evidence of hemolysis. Coombs' tests were obtained in a few cases, with positive and negative results about equally divided. The second

TABLE 3

TOTAL WHITE COUNT

Less than 3,000	2
3,000-4,900	2
5,000-9,900	1
10,000-19,900	7
20,000-49,900	10
50,000-99,900	3
More than 100,000	4
More than 200,000	5
More than 300,000	1

TABLE 4

DIFFERENTIALS

Lymphocytes, per cent	
- 50	2
51- 60	2
61- 70	3
71- 80	7
81- 90	10
91-100	11
Hemoglobin	
- 6	4
6.1- 8	1
8.1-10	6
10.1-12	11
12.1-14	10
14.1-16	3
Bone Marrow	
Chronic lymphocytic leukemia	32
Focal lymphocytic infiltration	1
Slight lymphocytosis (previously treated)	1
Not done	1

TABLE 5

DURATION OF SYMPTOMS PRIOR TO DIAGNOSIS

Unknown or uncertain	14
0- 3 months	8
4- 6 months	5
7-12 months	3
13-24 months	3
2- 3 years	0
3- 5 years	2

TABLE 6

COMPLICATIONS

Hemolysis		9
Definite	7	
Probable	2	
Bleeding		6
Purpura	6	
G I	1	
Pleurisy		3
Thrombophlebitis		2
Splenic infarct		2
Leukemia cutis		1
Ascites		1
Pulmonary infiltration		1
Diabetes (hemosiderosis)		1
Obstructive jaundice		1
Central nervous system involvement		1
Necrosis of the head of the femur		1
Herpes zoster		1
Pel-Ebstein fever		1

most frequent complication was hemorrhage. This developed late in the course of the disease and was felt to be a part of the illness, rather than a true complication of therapy. The single case of diabetes mellitus was due to hemosiderosis of the pancreas. This patient had received 102 units of blood prior to his death. Necrosis of the head of the femur, thought to be secondary to lymphocytic infiltration, was also observed in that patient.

TREATMENT

Asymptomatic cases were not treated. Unlike chronic myelogenous leukemia, in chronic lymphocytic leukemia the level of leukocyte elevation often does not correlate with the clinical activity of the disease. Therefore, an elevated leukocyte count alone was not considered an indication for treatment. Although this principle is generally accepted by most hematologists,[10] Osgood feels that regularly-spaced doses of P^{32}, even in the absence of clinical activity, reduce the morbidity and increase the survival of patients with chronic lymphocytic leukemia.[11] The choice of therapeutic agent for a given case is determined for most investigators by the extent of the patient's disease. For generalized or widespread lymph-node or organ involvement, with or without systemic symptoms and signs, Lawrence,[12] Osgood,[11] and Diamond[4] favor the use of P^{32} because of the absence of radiation sickness. Dameshek,[13] however, feels that P^{32} is less effective than x-ray irradiation. In this hospital, our earlier cases were treated with spray x-ray irradiation, and our later cases with P^{32}. No obvious difference in effectiveness was observed, and the choice was usually a matter of availability of the therapeutic agent and the familiarity of the attending physician with one or the other agent. Chlorambucil was used only on three occasions prior to 1958. This effective and relatively non-toxic chemotherapeutic agent has steadily gained in popularity, and has become the chemotherapeutic agent of choice in the treatment of chronic lymphocytic leukemia.[14, 15, 16] Maintenance therapy has been used with encouraging results.

TABLE 7

FREQUENCY OF AGENTS USED IN TREATMENT

X-ray	18
Steroids	18
Blood transfusions	16
Radioactive phosphorus	12
None	8
Chlorambucil	3
N_2H	2
Splenectomy	2
TEM	1
6-MP	1
Urethane	1

For localized organ or lymph-node involvement, regional x-ray therapy is preferred. Hemolytic anemia was treated with corticosteroids with gratifying results, except when the disease was in the terminal stage. In two cases, splenectomy was performed to control the hemolytic process. Temporary and satisfactory retardation of blood destruction was observed in both. Thrombocytopenia and purpura usually appeared late in the course of the disease and responded poorly to treatment.

Table 7 shows the frequency with which we used the different agents in the present series.

IMMEDIATE CAUSES OF DEATH

Twenty-four of our 35 patients with chronic lymphocytic leukemia have died. Fourteen of those deaths occurred in the hospital, and 10 occurred at home. In the latter group, the immediate causes of death were obtained through correspondence with the patient's family or with his family physician. Table 8 presents the frequency of conditions initiating death in the combined group. In eight cases, no dramatic episode occurred prior to death. Those patients ran a progressively downhill course, like many terminal cancer patients. An equal number had significant infections that hastened their courses. General debility, granulocytopenia, and a deficiency in immune mechanism all play a part in the susceptibility of chronic lymphocytic leukemia patients to infection. Ultmann *et al.*[17] studied 60 patients with chronic lymphocytic leukemia and lymphocytic lymphosarcoma, and found 19 individuals with hypogammaglobulinemia. Of those 19, he found that 89 per cent had infections, but of the 41 patients with normal gamma globulins, only 15 per cent had infections. One of our patients had Cryptococci, as demonstrated at autopsy, but the infection's share in causing death was undetermined. Six patients died of unrelated diseases. That is not surprising in patients of the older age group afflicted with a relatively benign form of the disease. In the series reported by Pisciotta *et al.*,[3] 43 per cent of the deaths were not caused by chronic lymphocytic leukemia. Serious bleeding occurred in three of our patients.

TABLE 8

IMMEDIATE CAUSES OF DEATH

Cachexia		8
Bleeding		3
G I	1	
Retroperitoneal	1	
Cerebral	1	
Pneumonia		6
Congestive heart failure		3
Coronary thrombosis		2
Cancer of the colon		1
Streptococcus fecalis septicemia		1

AUTOPSY FINDINGS

Eleven of the 14 patients who died in the hospital had postmortem examinations. The findings are listed in Table 9. The organs most frequently involved were the lymph nodes, the spleen, the liver and the bone marrow. Both cases of hemosiderosis were in patients who had had multiple transfusions.

TABLE 9
AUTOPSY FINDINGS

I. Organs involved by leukemic infiltration:			
Lymph nodes	10	Pancreas	2
Generalized	9	Urinary bladder	2
Retroperitoneal	1	Testes	2
Liver	10	Aorta	2
Spleen	9	Brain	1
Bone Marrow	9	Thyroid	1
Kidneys	7	Skin	1
Lungs	4	Prostate	1
Heart	3	Adrenal	1
		Intestines	1
II. Associated conditions:			
Bronchopneumonia	2	Geotrichosis	1
Hemosiderosis	2	Cryptococcosis	1

SURVIVAL

Of the 24 deaths, 14 occurred within three years after diagnosis. Five more patients died within another two years. The patient with the longest survival died 10 years after his illness was diagnosed, and death occurred from an unrelated illness. Tivey,[18] using the "maximum likelihood" method of Lea, found that 50 per cent of 1,978 patients reported in the literature survived only 2.65 years from the onset of symptoms. Using the same method of analysis, Osgood[18] found that 50 per cent of 58 patients treated with regularly-spaced doses of P^{32} survived for 4.5 years. This difference was highly significant. Lawrence[12] treated only cases with increasing leukocyte count, anemia, or enlargement of lymph node or spleen, and found a median survival of 5.4 years. This was almost identical with Osgood's result when calculated on the same basis. It seems clear that with the proper use of specific therapy, blood transfusions, corticosteroids and antibiotics, there has been a prolongation of useful life in patients with chronic lymphocytic leukemia.

SUMMARY

1. Thirty-five cases of chronic lymphocytic leukemia seen in the Iowa City Veterans Administra-

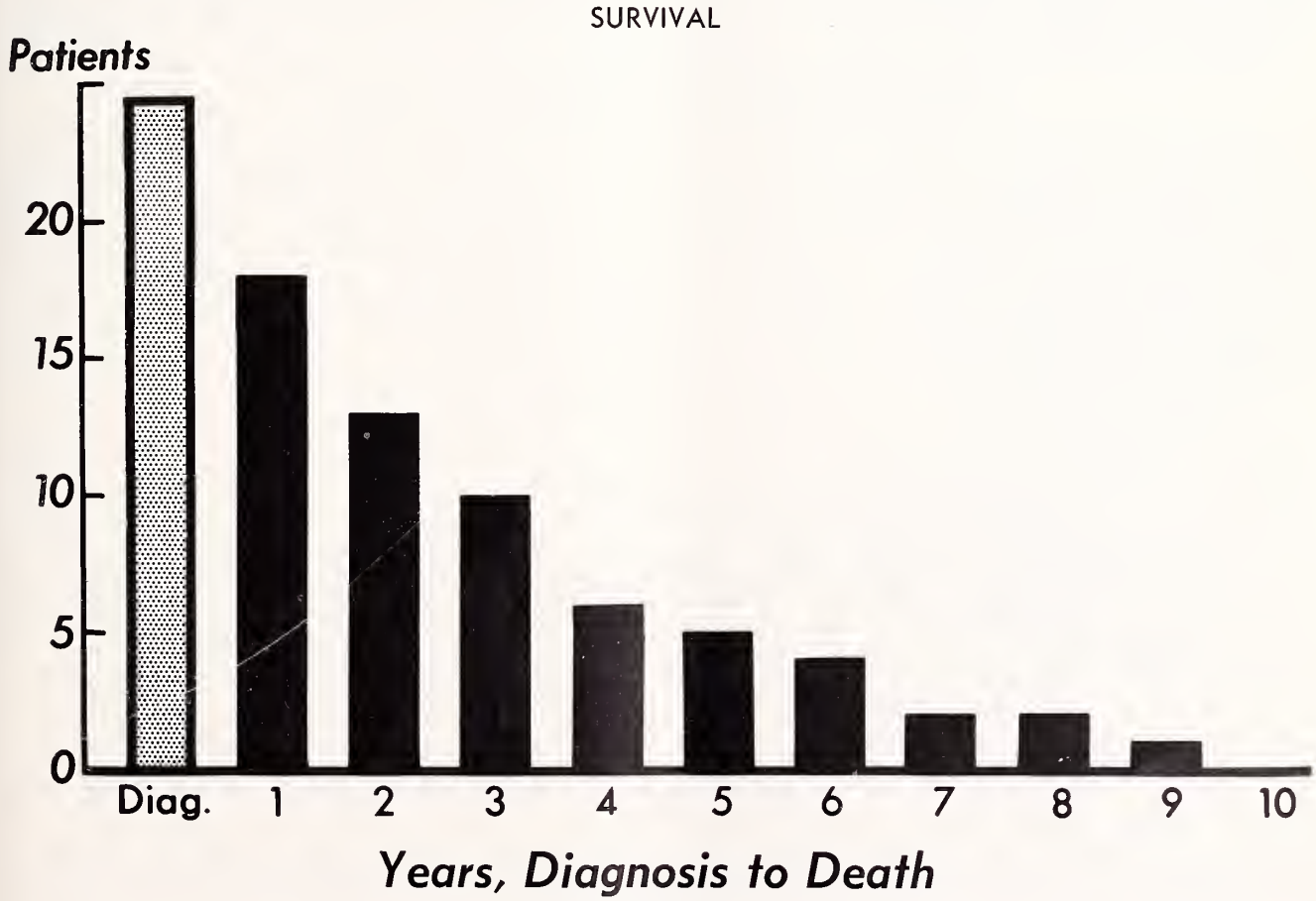

Figure 2

tion Hospital between 1952 and 1958 have been reviewed.

2. The peak age incidence was between the sixth and seventh decades. On admission, weakness and fatigue were the most frequent presenting symptoms (48.5 per cent). Twenty-five per cent of the cases were asymptomatic. Almost all patients had lymphadenopathy on physical examination, although only 11.4 per cent complained of the node enlargement. Hepatomegaly and splenomegaly were present in about half of the cases.

3. The total leukocyte count tended to be in the 10,000 to 100,000 range, with relative and absolute lymphocytosis. The hemoglobin was normal or only slightly depressed in the early cases.

4. The chief complications were hemolytic anemia, hemorrhage and infection. Six patients died from diseases unrelated to their leukemia. Forty per cent of the group survived for three years, and 20 per cent for five years.

5. Treatment consisted of x-ray therapy, P^{32}, corticosteroids, blood transfusions, alkylating agents and antibiotics.

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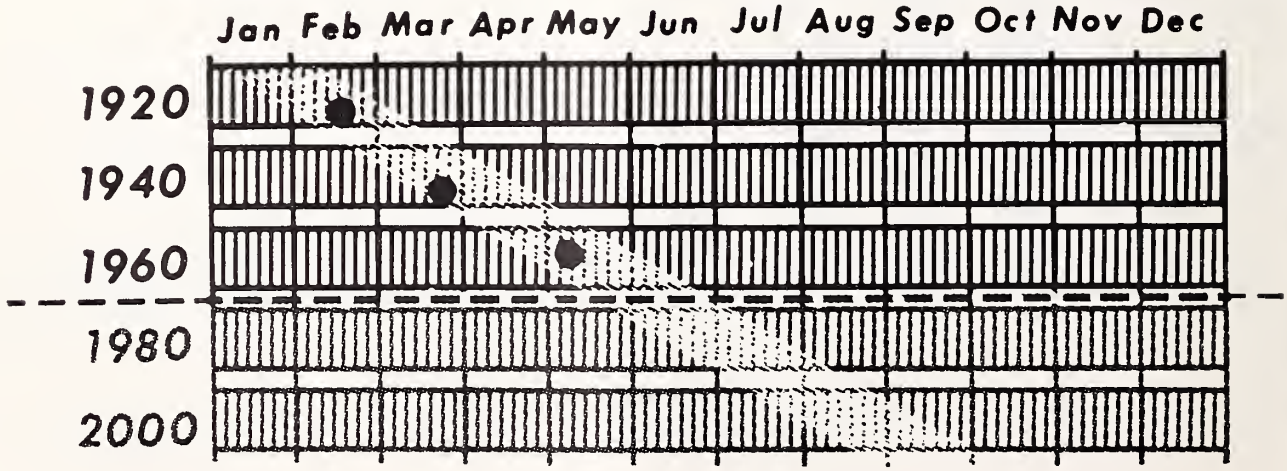

Bilateral Kidney Stones, Kidney Failure And Death in Childhood Due to Hyperoxaluria and Oxalosis

MR. JAMES E. DOLAN

IOWA CITY

PRIMARY HYPEROXALURIA is a rare disorder characterized clinically by progressive bilateral calcium oxalate urolithiasis and nephrocalcinosis beginning in early childhood, and by death in childhood or early adult life from renal failure.[1] A continuous high urinary oxalate excretion which is unrelated to exogenous factors can usually be demonstrated, and it differentiates these patients from the vast majority of those who have calcium oxalate urolithiasis. Recurrent urinary-tract infections and hypertension are common secondary features. The additional diagnosis of oxalosis signifies the presence of disseminated extrarenal calcium oxalate deposits, which may develop as a stage in the natural history of primary hyperoxaluria.[2] This disorder is thought to result from a genetically-controlled metabolic defect leading to overproduction of oxalate.

HISTORY

Oxalic acid is an organic acid, a dicarboxylic acid, with the formula HOOC-COOH. It is found in many common foodstuffs, particularly in beets, rhubarb, chocolate, tea and spinach. Oxalates have been known since about the middle of the seventeenth century, when an apothecary named Duclos mentioned "salt of sorrel," which is actually potassium oxalate. It could be isolated from the plant Oxalis acetosella.

Crystals of calcium oxalate were first separated and identified in the urine by Donne, in 1838. This discovery led to a profusion of synonyms—some 20 or 30 of them—all meaning oxalate lithiasis; and a very voluminous literature developed correlating them with diverse clinical signs and symptoms to create syndromes explaining various and sundry metabolic diseases and other ailments. Among the latter were diabetes mellitus, acute and chronic renal insufficiency, cirrhosis of the liver, nutritional deficiencies and cardiac failure, to name just a few.

This hypothesis fell into disrepute in the period between 1915 and 1930, when it was shown that calcium oxalate crystals are normal constituents of the urine and that their formation is dependent upon the pH of the urine and upon the concentration of other solutes.[3]

The first reported case of oxalosis was probably that of Lepoutre,[4] in 1925. He briefly described a 4½-year-old child with bilateral urolithiasis in whom a renal biopsy showed extensive crystalline deposits of calcium oxalate. Since then, many purported cases of this condition have been described in the literature, many with no chemical demonstration of elevated oxalate excretion or postmortem demonstration of crystalline deposits. I have found some 38 reported cases that satisfy one or more criteria for the diagnosis of this disorder, and they are summarized in Table 1. Only the cases of oxalosis in a pair of twins, reported by Aponte and Fetter,[5] in 1954, have met all of the critical criteria.

TECHNICS EMPLOYED IN THE STUDY

Urinary oxalate excretion was determined by the method of Archer *et al.*[6] Ten milliliters of concentrated hydrochloric acid was placed in a urine collection bottle, and a 24-hour urine sample was obtained. An aliquot of 200 ml. filtered urine was poured into a graduated cylinder and was divided in equal portions between two 200 ml. centrifuge bottles for duplicate analyses. Four milliliters of 5 per cent $CaCl_2$ was added to each bottle, and the contents were mixed. After standing overnight at room temperature, the bottles were centrifuged. Without disturbing the precipitated calcium oxalate, we removed as much as possible of the supernatant by suction. The precipitates were transferred quantitatively to 30-ml. test tubes with several 2-ml. washings with water. The tubes were centrifuged and the supernatants decanted. The precipitates were washed twice with 4-ml. portions of two per cent ammonia. The tubes were allowed to drain in an inverted position. The precipitates were then dissolved in 2 ml. of 1-N sulfuric acid, warmed to 80°C, and titrated with 0.01-N potassium permanganate.

Serum oxalate levels were attempted through the use of the same method. Their accuracy is an

Mr. Dolan is a third-year student at the S.U.I. College of Medicine. The chairman of the Department of Pediatrics at S.U.I., Dr. Wallace W. McCrory, has recommended the publication of this paper, saying that it is an exceptionally fine job, and a very pertinent and timely review of the subject. The scientific editor of the JOURNAL heartily concurs.

TABLE I

CASES OF OXALOSIS REPORTED IN THE LITERATURE

Author and Reference	Year	Sex	Age at Onset of Symptoms (Years)	Age at Death (Years)	Urolithiasis	Nephrocalcinosis	Extrarenal Deposits	Renal Failure	Family History of Stones?	Urinary Oxalate Excretion mg./24 hr.
Lepoutre[4]	1925	?	4	..	X	X	?	?	?	Not Measured
Vischer[27]	1947	M	10	11	O	X	?	X	O	Not Measured
Davis[28]	1950	M	3	12	X	X	X	X	?	Not Measured
Mulloy[29]	1951	M	4 mo.	5 mo.	O	X	?	X	?	Not Measured
Ostry[30]	1951	M	21	24	X	X	?	X	?	Not Measured
Chou et al.[2]	1952	M	2	7	X	X	X	X	X	Not Measured
Zollinger, et al.[31]	1952	M	3	4	O	X	X	X	?	Not Measured
Newns, et al.[32]	1953	F	2	..	X	?	?	X	X	95 to 182 mg.
Burke, et al.[33]	1955	M	3	11	X	X	X	X	?	Not Measured
Dunn[34]	1955	F	4	15	X	X	X	X	X	Not Measured
Neustein, et al.[35]	1955	M	1	4	X	X	X	X	X	Not Measured
Arons, et al.[36]	1955	M	5	24	X	X	X	X	?	Not Measured
Aponte, et al.[5]	1955	M	5	16	X	X	X	X	X	200 mg.
Aponte, et al.[5]	1955	M	10	13	X	X	X	X	X	180 mg.
Aponte, et al.[5]	1955	M	7	9	X	X	X	X	X	Not Measured
Lund, et al.[37]	1956	F	17	36	X	X	X	X	O	Not Measured
Lund, et al.[37]	1956	F	35	40	X	X	X	X	O	Not Measured
Archer, et al.[1]	1957	M	1	..	X	?	?	X	O	162 to 290 mg.
Archer, et al.[1]	1957	F	4	..	X	X	?	O	O	110 to 262 mg.
DeToni, et al.[38]	1957	M	Birth	11	X	X	X	X	O	Not Measured
Edwards[39]	1957	M	35	41	X	X	X	X	X	Not Measured
Edwards[39]	1957	M	23	23	O	X	X	X	X	Not Measured
Simko[40]	1957	?	1	3	X	X	X	X	O	Not Measured
Nieman, et al.[41]	1957	F	3 mo.	5 mo.	O	X	?	X	O	Not Measured
Oigaard, et al.[42]	1957	F	13	13	?	?	?	?	X	Not Measured
Oigaard, et al.[42]	1957	M	17	17	O	X	O	X	X	Not Measured
Oigaard, et al.[42]	1957	M	25	27	X	X	X	X	X	Not Measured
Oigaard, et al.[42]	1957	M	26	..	X	?	?	O	X	Not Measured
Wyngaarden, et al.[12]	1958	M	11	..	X	?	?	O	?	103 to 143 mg.
Godwin, et al.[43]	1958	M	5	10	X	X	X	X	X	130 to 180 mg.
Hodgkinson[44]	1958	M	8	..	X	?	?	?	?	230 mg.
Katzuni, et al.[45]	1959	F	3 mo.	4 mo.	?	X	X	X	?	Not Measured
Marshal, et al.[46]	1959	F	6 mo.	18 mo.	X	X	X	X	?	Not Measured
Marshal, et al.[46]	1959	F	17	24	X	X	X	X	?	Not Measured
Marshal, et al.[46]	1959	F	2	..	X	X	X	O	?	53 to 71 mg.
Daniels, et al.[11]	1960	F	14	..	X	O	?	O	X	262 mg.
Daniels, et al.[11]	1960	F	9	..	X	O	?	O	X	210 mg.
Daniels, et al.[11]	1960	F	14	..	X	O	?	O	X	182 mg.
Dolan	1961	M	18 mo.	14	X	X	X	X	X	18 to 47 mg.

unknown quantity, but they are included for completeness.

Crystal identification was attempted through comparison with published descriptions—i.e., they had been characterized as round and globular or rhomboidal, and to have a radial, rosette-like pattern. They have a slightly yellowish tinge. We also examined them under polarized light—i.e., half-crossed Nicol prisms—in an attempt to demonstrate double refractility. Histochemical identification was attempted by the von Kossa technic for lime salts, viz.: Fix in alcohol, in a solution of formaldehyde or in a corrosive sublimate; place sections in a 1-5 per cent aqueous solution of silver nitrate for from 30 to 60 minutes; wash in distilled water; mount in glycerin or balsam. The lime is stained deep black.

An x-ray diffraction analysis was done on the tissue crystalline deposits. A standard powder diagram was obtained. The specimen was compared with authentic specimens of calcium oxalate monohydrate and other published patterns.*

* I wish to express my thanks to Professor Norman Baenziger and Mr. Ronald C. Medrud, of the S.U.I. Chemistry Department, for their assistance in demonstrating the nature of crystalline deposits by means of x-ray diffraction.

CASE REPORT

H. L. (S.U.I. No. 58-2052) was the eldest of five children of white parents of mixed national stocks. He is said to have passed a ureteral stone in 1949, at the age of 30 months.

The boy had apparently been well until the age of 29 months, when he developed recurrent painless hematuria. The passage of the stone, one month later, was associated with some pain, but he was not hospitalized at that time, nor was the stone saved or analyzed.

There were no recurrences of urolithiasis or hematuria, nor were there any urinary-system infections until 1955, or about six years ago. In August of that year, he became oliguric, developed periorbital and facial edema, had some flank pain, and subsequently was admitted to the local hospital for investigation. Roentgenograms showed small bilateral radiopaque stones in the lower poles of both kidneys, and they were estimated to be 1-1½ cm. in diameter. A urine culture at that time grew out Pseudomonas aeruginosa and Proteus vulgaris. He subsequently passed one small, dense calculus, associated with marked flank pain and hematuria, and another was extracted from the left ureter. Analysis of the stones showed small amounts of uric acid and phosphates, and a high percentage of calcium oxalate.

He was discharged with instructions to follow an alkali-producing diet and to force fluids. He remained in fairly good health until October, 1960, when he developed spells of dizziness and increased fatiguability. Late in December, 1960, he showed increased restlessness, fever, stupor, vomiting and visual disturbances, and developed a severe headache. Shortly thereafter, his lips and tongue swelled, and there was perioral cyanosis and respiratory difficulty. He was admitted to the local hospital, was given oxygen and two units of blood, and was maintained on intravenous fluids. He failed to improve, and his uremic condition worsened. He was then taken to Iowa City, and was admitted to the S.U.I. Hospitals on January 2, 1961.

The patient's maternal grandfather and two great-uncles were said to have had renal calculi. The patient's sister, age 5, is said to have complained of suprapubic and right upper quadrant pain following urination ever since she became able to talk well, and her condition has been worse during the last three or four months. The patient's parents and his other siblings are asymptomatic (Figure 1).

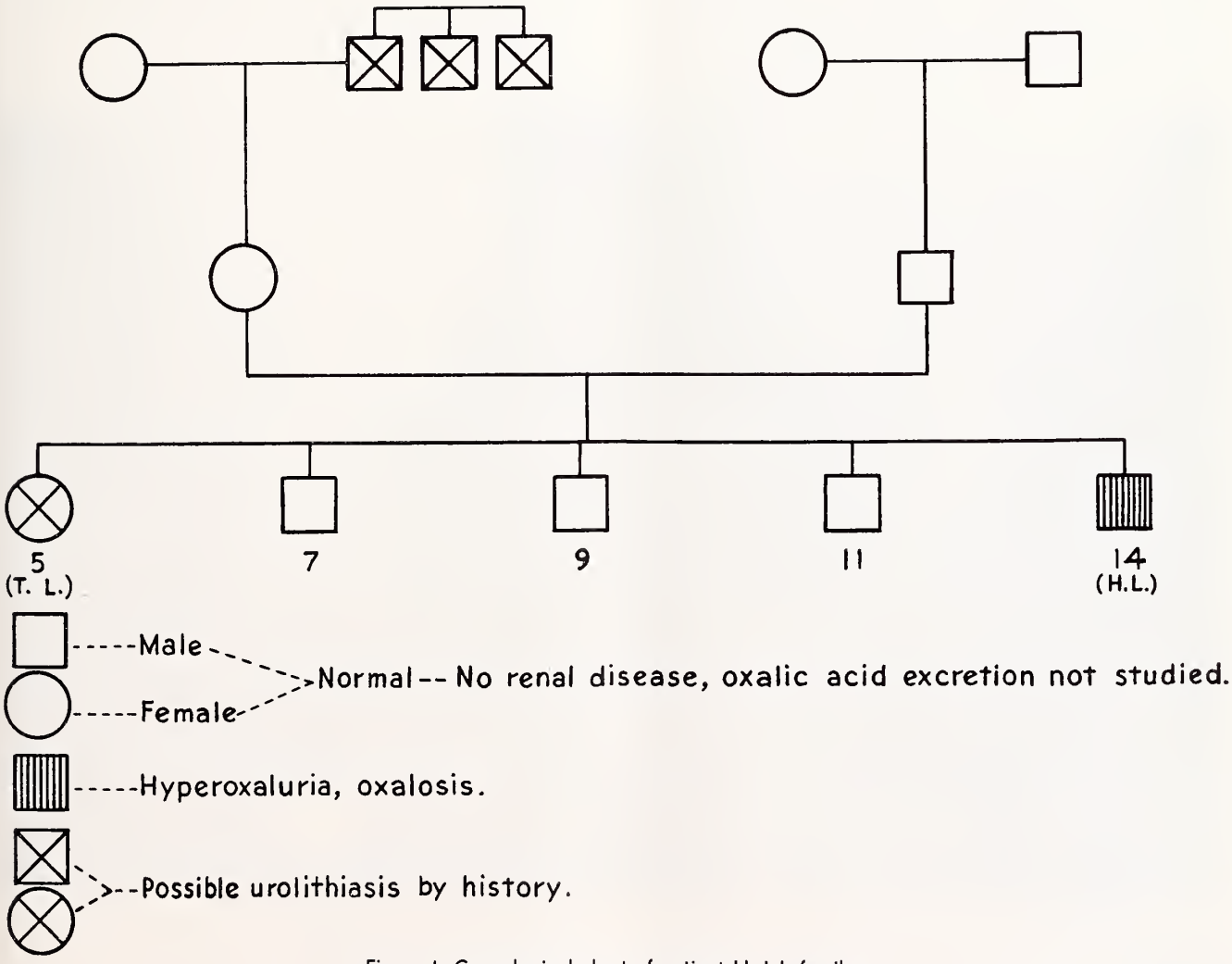

Figure 1. Genealogical chart of patient H. L.'s family.

Physical examination revealed this patient to be a normally developed and well-nourished, afebrile boy in no acute distress. Routine examination showed periorbital edema, bilateral costovertebral-angle pain, and minimal pretibial edema. Neurological examination disclosed hyperactive tendon reflexes and a latent positive Chvostek's sign. There was moderate ataxia present.

Routine laboratory tests performed immediately following admission revealed renal insufficiency and acidosis. The findings were as follows: blood pH 7.23; plasma CO_2 combining power 11.3 mEq./-L.; serum calcium 3.1 mg./100 cc.; serum phosphorus 12 mg./100 cc.; blood urea nitrogen 260 mg./100 cc.; creatinine 28 mg./100 cc.; serum sodium 133 mEq./L.; potassium 5.5 mEq./L.; chlorides 98 mEq./L.; hemoglobin 9.7 Gm./100 cc.; white blood cell count 9,750/cu. mm., with 1 band, 97 segmented polymorphonuclear leukocytes, 1 lymphocyte and 1 monocyte; total serum proteins 7.9 Gm./100 cc.; albumin 2.7 Gm./100 cc.; globulins 5.2 Gm./100 cc. The tuberculosis and Wassermann tests were negative. Urinalysis of a voided specimen showed specific gravity 1.012; pH 6.5; albumin 3+; no sugar by Benedict's type test; 10-12 white blood cells per high-power field in an unspun specimen; and numerous bacteria. A culture of the urine grew out Proteus vulgaris, Staphylococcus albus and Aeruginosa aerogenes.

On the evening of the second hospital day, the patient became stuporous and hyperventilated, and had a markedly positive Chvostek's sign and generalized tetany. The blood pressure was noted to be 180/116/110 mm. Hg; there was a systolic grade III murmur heard best at the apex, and the patient was anxious and hyperactive. A pericardial friction rub was heard by one examiner.

The boy was treated with antihypertensives, a rebreathing mask was used, and intravenous fluids were administered with an added antibiotic for urinary-tract infection. Under this regimen his hypertension, murmur and tetany rapidly regressed.

A urological consultation was obtained at this time, and a plane film of the abdomen showed bilateral renal calculi in the lower poles of both kidneys. A cystoscopic examination revealed a normal bladder. Bilateral retrograde pyelography demonstrated good filling of the calyceal system, and the presence of two small calcific stones in the lower pole of the right kidney, and five or six smaller stones in the lower pole of the left kidney. The kidneys were thought to be smaller than normal for a patient of this age. The bony structures were normal (Figure 2). The impression was a probable metabolic problem, with stone formation and chronic renal failure. Consequently, a quantitative urine specimen was collected and analyzed for possible cystinuria. It was negative.

Ophthalmologic examination revealed no crys-

Figure 2. Left, abdominal roentgenogram showing bilateral renal calculi in the lower poles of both kidneys. Right, abdominal roentgenogram showing retrograde pyelographic evidence of good filling of the calyceal system, and the presence of stones bilaterally.

tals in the corneal limbus. Bone marrow aspiration or biopsy was suggested, but was not done at that time because of the patient's clinical condition, which had worsened. Hyperoxaluria was considered, and quantitative urines were collected and analyzed for oxalates (Table 2). The excretion varied from 18 to 47 mg./24 hrs., as compared to the normal range of 20 to 40 mg./24 hrs. The oxalate/creatinine ratios, however, were quite elevated, ranging from 0.102 to 0.158 mg. of oxalate per milligram of creatinine. The normal is 0.02 mg. of oxalate per milligram of creatinine.[1]

TABLE 2
24-HOUR URINARY OXALIC ACID EXCRETIONS OF PATIENT H. L.

Date	Urine Volume	Creatinine (mg./24 hr.)	Urinary Oxalic Acid Excretion (mg./24 hr.)	Oxalate to Creatinine Ratio (mg. Oxalate/mg. Creatinine)
1-17-61	1,310 cc.	434 mg.	47 mg.	.109
1-18-61	890 cc.	282 mg.	40 mg.	.102
1-19-61	360 cc.	126 mg.	20 mg.	.158
1-21-61	700 cc.	144 mg.	18 mg.	.132
1-22-61	Anuric	———	———	——
1-23-61	Dialysis I (dialysate analysis showed 36 mg. oxalate present).			
1-24-61	Dialysis II (dialysate analysis showed 6 mg. oxalate present).			

A low-protein, low-oxalate diet with added vitamin B-6 was given, and the latter in the form of pyridoxine hydrochloride, 50 mg. daily, was given during the last eight days of the patient's hospitalization. It did not appreciably affect the excretion of oxalic acid.

The patient made some clinical improvement, but the blood chemistry did not return to normal levels in spite of vigorous fluid and electrolyte management. On the twentieth hospital day the blood urea nitrogen was 290 mg./100 cc., the creatinine was 21 mg./100 cc., the serum sodium was 141 mEq./L., the potassium was 5.3 mEq./L., the CO_2 was 12.2 mEq./L., the chlorides were 84 mEq./L., the calcium was 9.9 mEq./L., and the patient's clinical condition was deteriorating.

Extracorporeal dialysis was performed. During the course of the first dialysis, the patient had a grand mal seizure and developed a cardiac arrhythmia. Both, however, responded rapidly to treatment. Post-dialysis blood chemistry showed the blood urea nitrogen to be 130 mg./100 cc., the creatinine 11 mg./100 cc., the CO_2 20.6 mEq./L., the serum sodium 146 mEq./L., the potassium 4.8 mEq./L., the chlorides 97 mEq./L., and the phosphorus 2.9 mEq./L.

The second dialysis, on January 24, 1961, was uneventful, and the post-dialysis blood chemistry showed the blood urea nitrogen to be 60 mg./100 cc., the creatinine 8.3 mg./100 cc., the CO_2 20.8 mEq./L., the serum sodium 146 mEq./L., the potassium 4.2 mEq./L., and the chlorides 96 mEq./L.

The third and final dialysis, on January 25, 1961, was also uneventful, and the post-dialysis blood chemistry showed blood urea nitrogen to be 40 mg./100 cc., creatinine 8 mg./100 cc., CO_2 20.8 mEq./L., serum sodium 140 mEq./L., potassium 4.8 mEq./L., chlorides 96 mEq./L., calcium 7 mEq./L., phosphorus 8.8 mEq./L., total plasma proteins 5.5 Gm./100 cc., albumin 3.2 Gm./100 cc., and globulins 2.3 Gm./100 cc.

The patient had moderate edema following the second dialysis and until death. His condition steadily worsened. Terminally, there was fever to 103° F. and a slight weight loss, some cyanosis and diarrhea. Death occurred in sleep on the twenty-fifth hospital day at 4:00 a.m.

At autopsy, the gross findings were uremia, chronic nephritis, bilateral renal calculi, left ventricular hypertrophy, fibrinous pericarditis, a pericardial effusion (350 cc.) and hepatosplenomegaly.

Examination of the pathological material revealed the major lesions to be present in the kidney. The kidneys were reduced in size and intensely scarred. The capsule was adherent and thickened. On section, a gritty feeling was apparent. The cortex and medulla both showed reduction in size. Multiple calculi were present in the lower poles bilaterally. A single calculus was located in a diverticulum of the mid-pelvis which extended almost to the cortex on the left (Figure 3).

Microscopic examination of the sections revealed marked destruction of renal parenchyma, with fibrosis and chronic inflammatory cell infiltration.

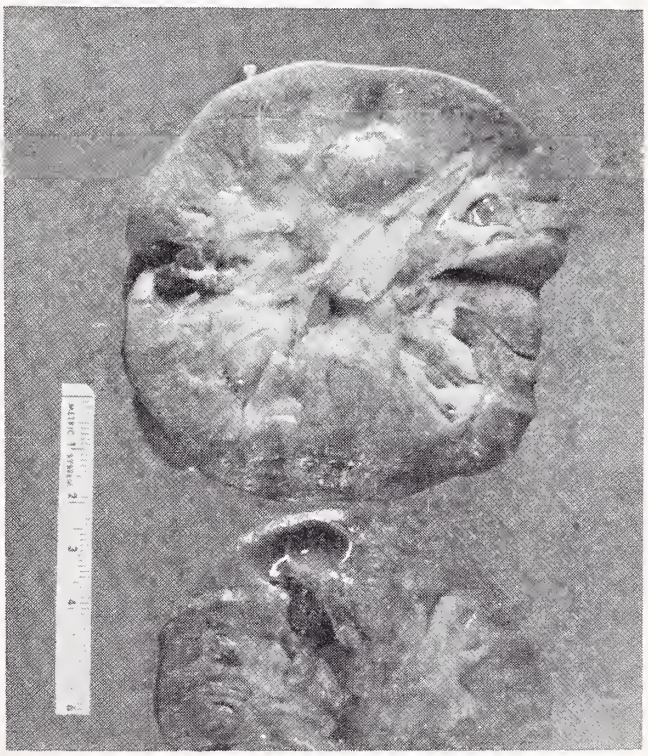

Figure 3. Gross specimen showing reduction in size, intense scarring, and presence of bilateral multiple calculi. Note the diverticulum in the specimen at the bottom. It contained a single large calculus on initial examination.

The crystals appeared to be aggregated as a rosette, with radial striation or fissuring, but some showed wedge shapes or appeared to be blunt needles in the form of small sheaves. The deposits were mainly intratubular. Many of the involved tubules were destroyed. Most of the glomeruli were free of crystalline material, but a few contained small calcium oxalate deposits (Figure 4).

The crystals exhibited marked birefringence when viewed with a polarizing microscope (Figure 5).

The stones were analyzed and found to be inorganic, with calcium oxalate and calcium phosphate as the chief constituents.

Other tissues also showed crystalline deposits. The media of the coronary vessels, myocardium, gallbladder, gut, aorta, thyroid, testicles, and bone marrow all showed some deposition. The parathyroid showed a single isolated deposit (Figures 6 and 7).

Other analyses performed on the crystalline deposits in the kidneys demonstrated that they did not stain with hematoxylin and eosin. They did stain a dirty brown with the von Kossa stain, but not the deep black color described in the literature. X-ray diffraction of the crystalline deposits was done, and the powder diagram obtained showed identical features when compared with that of an authentic specimen of calcium oxalate monohydrate (Figure 8).

COMMENT

This, then, seems to have been a case of familial primary hyperoxaluria and oxalosis. Markedly elevated urinary oxalate/creatinine ratios were demonstrated. Bilateral calcium oxalate urolithiasis and nephrocalcinosis were described, with death occurring in adolescence from renal failure. Recurrent urinary-tract infections and hypertension certainly were part of this patient's clinical picture. Oxalosis was demonstrated in many tissues in addition to the described calcium oxalate deposits in the kidneys.

Pyridoxine administration did not appear to alter the urinary oxalate excretion appreciably in this patient.

The clinical manifestations in this patient seem to fit the generally described pattern. Urinary calculi are said to appear early, usually within one to four years. In this patient they were evident at the age of 29 or 30 months. Once calculus formation has occurred, the clinical course appears relentless, though liable to considerable variations in the rate of progression. In defiance of treatment, either surgical or preventive, the quiescent inter-

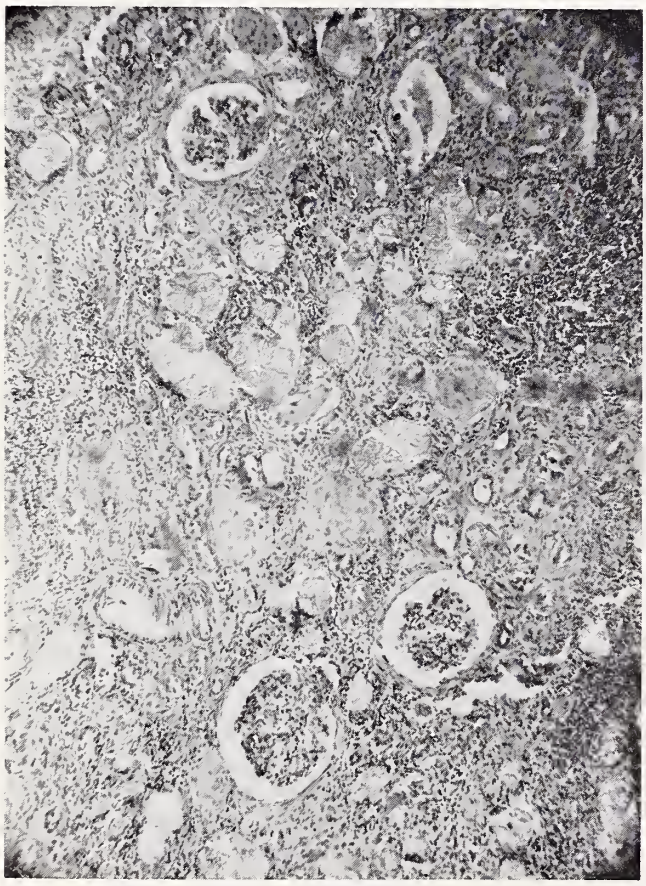

Figure 4. Oxalate nephrocalcinosis from patient H. L. with primary hyperoxaluria and oxalosis. Most of the calcium oxalate crystals are related to the remains of the renal tubules. Note the crystal formation in aggregates as a rosette with radial striation or fissuring (hematoxylin and eosin stain ×64).

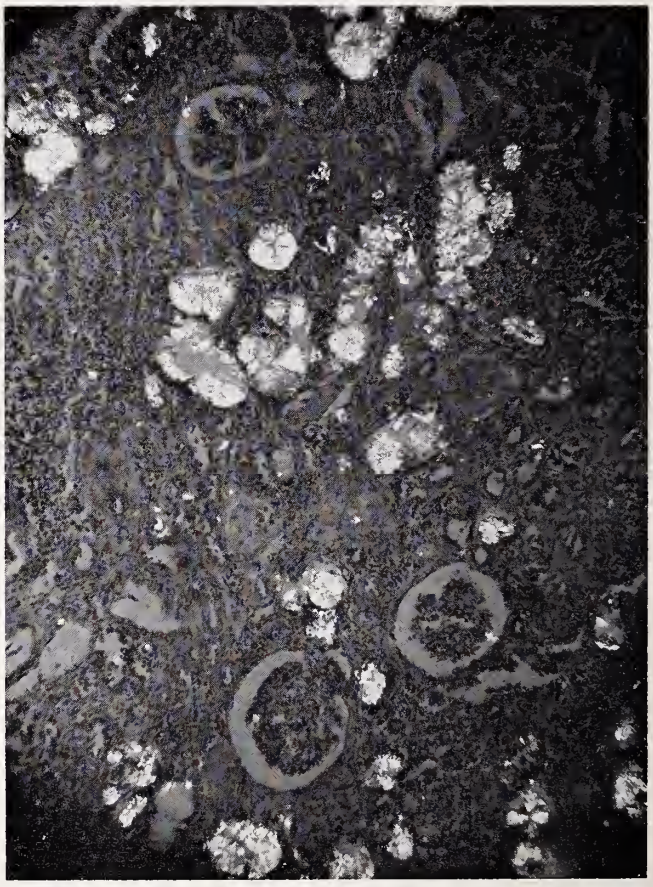

Figure 5. Oxalate nephrocalcinosis from patient H. L. with primary hyperoxaluria and oxalosis. Most of the calcium oxalate crystals are related to the remains of the renal tubules. Note the marked birefringence. (Half-crossed Nicol prisms ×70.)

Figure 6. Calcium oxalate crystals in a single large deposit in the parathyroid of patient H. L., with hyperoxaluria and oxalosis (Hematoxylin and eosin stain × 150).

Figure 7. Same specimen examined under half-crossed Nicol prisms (× 150).

vals are punctuated more and more frequently by episodes of colic or hematuria from recurrent calculi. Infection complicates these episodes quite often. Nephrocalcinosis supervenes sooner or later, and renal function fails. Some survive through years of chronic failure, with polyuria and chronic disability. Others succumb with rapidly advancing uremia, as did our patient in this final episode. A few survive much longer, to be the victims of advancing hypertension, papilledema, renal insufficiency and often heart failure.

Another group of manifestations has been described, wherein the patient who presents is acutely ill with convulsions and vomiting, severe acidosis and often oliguria, with progressive renal failure and death in a few days to a few weeks. At postmortem, the classical findings of oxalosis are demonstrable, with extensive calcium oxalate nephrocalcinosis. It would seem probable that if these children are primarily hyperoxaluric, the initial dehydration and sodium depletion might well impair their capacity to excrete oxalate. The mobilization of calcium and hypercalcuria would result in gross and rapid renal obstruction with insoluble oxalate. A vicious circle thus established would produce severe progressive renal failure with oxalate retention.[10] This may be the explanation which the common clinical features of our case suggest.

DISCUSSION

Hyperoxaluria and oxalosis are disorders of oxalic-acid metabolism, but the relation of one to the other is not altogether clear. Two alternatives have been proposed. (1) The viewpoint of Archer *et al.*[1] is that hyperoxaluria and oxalosis are reflections of the same underlying defect in the metabolism of oxalic acid. They suggest that excessive formation of oxalate leads to a high concentration of this ion in body fluids, resulting both in excessive urinary concentration of oxalate, or hyperoxaluria, and in the deposition of oxalate crystals throughout the body, or oxalosis. (2) A second viewpoint has been suggested by Daniels *et al.*[11] They hypothesize that primary hyperoxaluria and generalized oxalosis may be entirely separate entities—hyperoxaluria being the result of a renal "leak" similar to that described in certain aminoacidurias,[8] and generalized oxalosis being due to an inborn error of metabolism involving a secondary hyperoxaluria resulting from the vastly increased total body pool of oxalate. They would thus bear the same relationship to one another as do cystinuria, in which there is no generalized disturbance of cystine metabolism but only a renal leak, and cystinosis, a generalized defect with inability to metabolize cystine, one manifestation of which may be secondary hypercystinuria.[8]

Oxalic Acid Metabolism. Little more has been proved about the metabolism of oxalate since Dakin suggested, in 1922, that it probably represents an end product. He suggested that it is not oxidized by mammalian tissues, nor is essential for any metabolic process.[9] Oxalic acid precursors may be classified as oxaliphores, those foods in which oxalate is preformed as the sodium or calcium salt, and oxaligenes, substances serving as precursors of endogenous oxalic acid.[11] Thus, it has been demonstrated that isotopically-labelled oxalates given in the forms of oxaliphores, labelled oxalic acid-C^{14}, orally or as oxaligenes, subcutaneously or intraperitoneally, are excreted virtually unchanged in the urine and feces with essentially no labelling of respiratory carbon dioxide or urinary hippurate.[12]

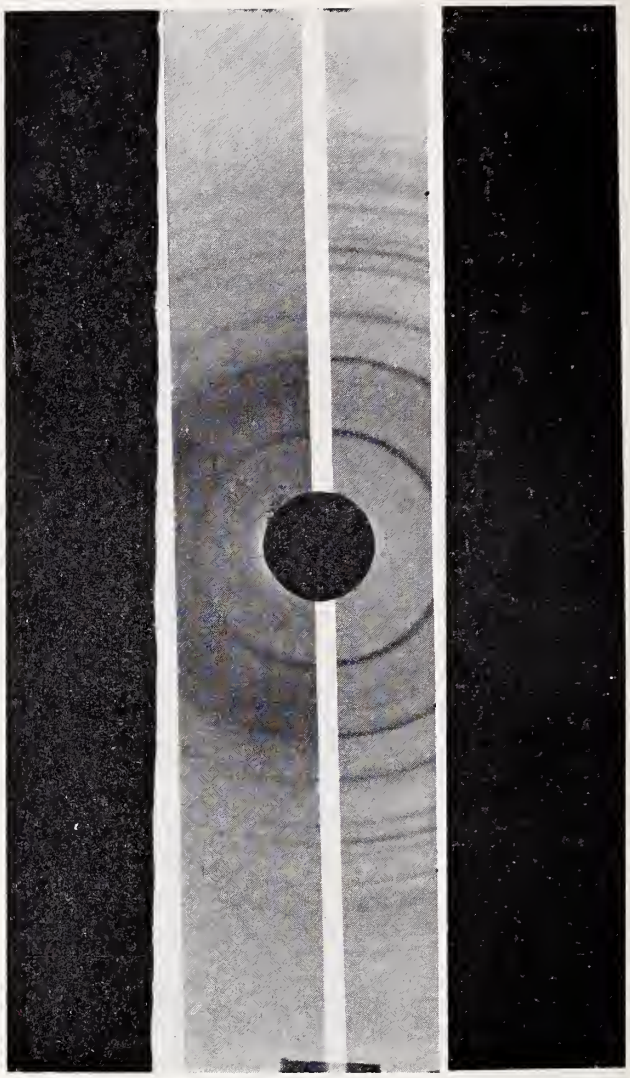

Figure 8. Powder diagram produced during the examination of the crystalline deposits. Note that the control pattern on the right, produced from an authentic specimen of calcium oxalate monohydrate, is almost identical with the pattern produced on the left, on examination of the tissue crystalline deposits.

Until recently, the major source of oxalate in the body was thought to be ingested foodstuffs, especially chocolate, cocoa, tea, spinach, beets, rhubarb and lamb, all of which contain large quantities of soluble oxalates. Several authors have suggested that the diets of British troops in India were rich in oxalates, and that in consequence there were increased urinary calcium oxalate crystals, and presumed but not measured hyperoxaluria in those troops.[13] In other areas where

diets rich in certain green vegetables were common, as in central Europe following World War I, an increased incidence of oxalate stones was attributed to this dietary regimen. Coversely however, in other areas where oxalate stones are common, the diet often is extremely low in oxalic-acid content.[15]

Parasitic infestations with certain organisms have been associated with increased quantities of oxalate crystals in the urinary sediment. Intestinal fermentation by colon bacilli, certain strains of which are known to produce oxalic acid *in vitro*, has been associated with excess oxalate in the body. The proposed method of oxalogenesis seems to be a toxin diminishing the "oxalolytic" action of the liver.[16] Hyperoxaluria may be the result of such diminution.

Recent studies have cast doubt on the importance of exogenous oxalate in the pathogenesis of oxalate urolithiasis. The administration of sodium oxalate to normal and hyperoxaluric subjects resulted in the same augmentation of oxalate excretion in each—in amounts directly proportional to the increase in oxalate intake.[16]

Endogenously-formed oxalate now appears to be of more importance in the understanding of these disorders of oxalic acid metabolism. In mammalian systems, the only known direct precursor of oxalic acid is glyoxylic acid. Glyoxylic acid can arise from several sources, the major one of which is glycine.

Ratner, Nocito and Green,[17] in 1944, first demonstrated that glycine serves as a precursor of oxalic acid. They prepared, from a variety of mammalian kidney and liver sources, an enzyme which oxidizes glycine (or sarcosine) to glyoxylic acid in the presence of flavin adenine dinucleotide (FAD). They named this enzyme glycine oxidase. They also found an enzyme system in rat kidney and liver, and in cat muscle, which catalyzes the conversion of glyoxylic acid to oxalic acid. They thought this enzyme to be a mutase of the general type:

$$2 \text{ glyoxylate} \longrightarrow \text{oxalate} + \text{glycolate}$$

Kidney tissue appears to be the richest source of both glycine oxidase and "mutase."

A second reaction by which glycine may be converted to glyoxylic acid is transamination between glycine and α-ketoglutaric acid.[18] This reaction is freely reversible. Nakada and Weinhouse[19] showed that the major fate of glyoxylic acid is normally a transamination to glycine, a function that requires pyridoxal phosphate as a coenzyme. Glycine was also converted to glyoxylic acid and carbon dioxide, and sparingly converted to oxalic acid. Reactions involving glyoxylic acid and oxalate formation are summarized in Figure 9. The scheme shown there may represent an enzyme deficiency or a block in the alternate metabolic pathways of glycine. The result of such a deficiency or block may be hyperoxalemia. The scheme also shows why pyridoxine administration may be helpful in this disorder. It may enhance the transamination of glyoxylic acid to glycine, thus reducing oxalate formation.

The feeding of large doses of sodium benzoate to hyperoxaluric patients temporarily reduces urinary excretion of oxalate. It is likely that the action of sodium benzoate is to condense with glycine (benzoate $\longrightarrow$ benzoyl CoA; benzoyl CoA + glycine in the presence of glycine N-acylase $\longrightarrow$ hippuric acid) to form hippuric acid, thus reducing the available pool of glycine. We did not use this therapy in our case, and cannot confirm its value.

Ascorbic acid may serve as a precursor of urinary oxalate in man. Ascorbic acid labelled in its carboxyl carbon with C^{14} has been shown to be converted to labelled urinary oxalate in man,[20] presumably through the intermediate formation of its oxidized products, dehydroascorbic acid and 2, 3-diketo-1-gulonic acid. Although it is known that carbon atoms 1 and 2 of ascorbic acid contribute to the formation of oxalate, the specific mechanisms involved are not yet clear. Conversion of ascorbic acid to oxalate may account for the major part of the endogenous urinary oxalate excreted by normal man, but probably not the increased amounts found in the urines of patients with hyperoxaluria. The amount of oxalic acid which can be formed in man from 1-ascorbic acid appears to be limited, since the administration of ascorbic acid in doses of 4 Gm. per day to human subjects resulted in no significant increase in the excretion of oxalate. Doses as high as 9 Gm. per day of the vitamin produced an increase of only about 60 mg. per day of

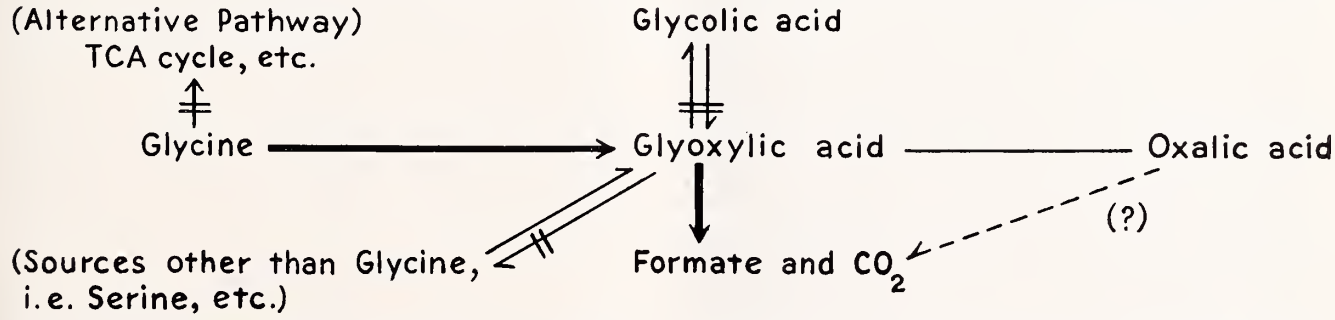

Figure 9. Proposed scheme of metabolic error in this disorder. Major pathways are indicated with heavy arrows; minor pathways are indicated with light arrows.

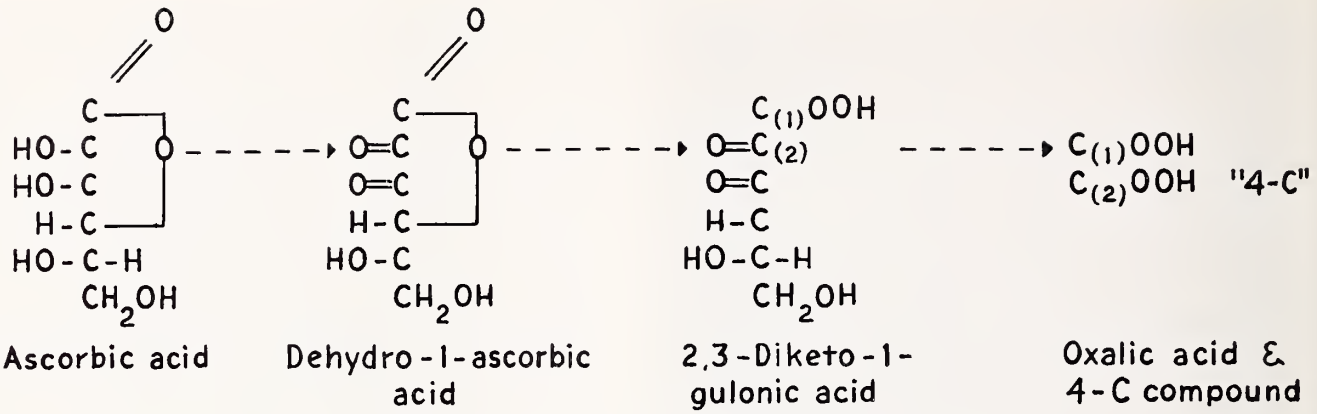

Figure 10. Proposed scheme of oxalate formation from ascorbic acid.

oxalate over the control values.[21] Figure 10 shows what the sequence in that reaction may be.

Other pathways for the biosynthesis of oxalic acid have been hypothesized in older studies for glucose. The metabolic pathway for such oxalate formation from glucose is not known. Still other pathways for the biosynthesis of oxalic acid have been found in microbial organisms and seem to incriminate two intermediates of the Krebs tricarboxylic acid cycle as precursors of oxalate. The precusors identified are oxaloacetic acid, oxalosuccinic acid and β-ketoadipic acid.[22]

It thus seems that the large amount of oxalate present in the urine and tissues of patients with oxalosis is of endogenous origin. Glycine is a precursor of about the same percentage of the urinary oxalate in patients with primary hyperoxaluria as in control subjects. The basic abnormality in primary hyperoxaluria is therefore probably a failure of one or another of the reactions by which glyoxylate is metabolized, other than to oxalate, viz., transamination to glycine, reduction to glycolic acid or oxidative degradation to formate and carbon dioxide, rather than excessive endogenous production of glyoxylate from glycine.[12]

Whatever the defect, it appears to be severe and lifelong. No cofactors are known that are unique to glyoxylate metabolism, and no metabolic defect is known to exist in hyperoxaluric subjects other than overproduction of oxalate. It is reasonable therefore to postulate that an enzymatic step concerned directly or indirectly with glyoxylate metabolism may be defective in this disorder.[12]

Oxalate Calculi. Various authors have estimated that from 22 to 70 per cent of all urinary-tract stones in the United States are composed of oxalate. The divergence of the estimates may be due to the use of different classification methods. In Europe, oxalate stones are said to constitute 65 per cent of all calculi.[14]

The reasons for the formation of oxalate calculi are not known, but certain facts concerning these stones seem well established. It is generally agreed that neither stasis nor infection plays a part in their formation. The part that heredity plays in their pathogenesis is unclear at this time.

Calcium oxalate stones form in urine that is acid, alkaline or neutral, although in pure form they occur only when the urine is acid. Oxalate stones remain insoluble in either an acid or an alkaline urine.[23] Recent experimental work has suggested that the metabolism of oxalic acid plays a secondary role in the production of calcium oxalate stones, and that more important factors concerning their formation are to be found in the metabolism of calcium and magnesium. Colloidal citrate forms, vitamins A and D, and urea may also be involved.[24]

There are certain characteristics of oxalate stones that are perhaps important clinically. These stones frequently are of small size, and they readily enter the ureter from the renal pelvis. Therefore, they constitute a large percentage of ureteral calculi. Because of a rough surface, often with spicules, oxalate stones frequently cause hematuria and severe colic. In the bladder they may assume such bizarre forms as mulberry or jack-stone calculi. Seldom do oxalate stones attain the staghorn size of calcium phosphate or cystine calculi.

In gross appearance, calcium oxalate stones vary considerably. In color, they are usually dark brown. Calcium oxalate calculi are very opaque to x-rays, and these stones cast dense, well-defined shadows. The roentgenologic appearance of the stones themselves may be quite characteristic, with spicules radiating from a central nucleus, somewhat like a snowflake.[23]

Genetic Aspects. Gram,[25] in a study of five generations of a family in which calcium oxalate stones occurred with great frequency, concluded that the inheritance pattern followed that of a Mendelian dominant trait which expressed itself almost exclusively in males. Archer *et al.*,[26] in a study of many of the reported cases, concluded that the data are compatible with the hypothesis that primary hyperoxaluria is due to the operation of a rare recessive characteristic. Several cases of oxalosis in twins have been reported (Table 1).

SUMMARY

The terms *hyperoxaluria* and *oxalosis* have been defined. Hyperoxaluria is a rare disorder char-

acterized clinically by progressive, bilateral calcium oxalate urolithiasis and nephrocalcinosis beginning in early childhood and by death in childhood or early adult life from renal failure. A continuous high urinary oxalate excretion, unrelated to exogenous factors, can usually be demonstrated. Oxalosis signifies the presence of disseminated extrarenal calcium oxalate deposits. It is unclear at the present time whether they are independent entities or different stages in the same disease.

A case report of a patient with hyperoxaluria and oxalosis has been presented. Treatment with pyridoxine had no effect in this terminal case. A low-protein, low-oxalate diet had no effect. This patient's background provided some suggestion of a familial pattern productive of nephrolithiasis.

Oxalic-acid metabolism has been discussed. The disorder is thought to result from a genetically-controlled metabolic defect. It is likely that the defect involved is one involving an enzymatic step concerned directly or indirectly with glyoxylate metabolism.

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SUMMARY OF CLINICAL FINDINGS

A 62-YEAR-OLD retired rural mail carrier had first been seen seven years prior to his last admission, because of pain and disability of the left hip. The diagnosis had been old, ununited left femoral-neck fracture, and he had been seen many times during the subsequent two years for treatment and evaluation. He had four operative procedures, the last of which was the insertion of a Thompson prosthesis.

Six years before the last admission, he had been referred to Urology because of an enlarged prostate gland and a right upper quadrant abdominal mass. At that time the patient had no complaints referable to his genitourinary tract except for a slight decrease in the size and force of his urinary stream. There was a 2 x 3 in., firm, non-tender, freely-movable right upper quadrant mass which did not move with respiration. The prostate was enlarged, firm and rubbery. There was 250 cc. of residual urine. A right retrograde pyelogram showed a mobile right kidney. The clinical diagnosis was benign prostatic hypertrophy. Transurethral prostatic resection was advised at that time, but the patient refused surgery.

Four years before the last admission, the patient had been seen because of nocturia and further decrease in the size and force of his urinary stream. The right upper quadrant mass had not enlarged and had caused him no symptoms. The prostate was 2+ enlarged, and had a firm, rubbery left lobe and a hard, nodular right lobe. It was thought to be malignant, and it was presumed that there was an extension to the right seminal vesicle. Urinalysis revealed a pH of 6.0: a specific gravity of 1.014; 1+ albumin; many white blood cells and 5 red blood cells per high-power field; and an occasional granular cast. Intravenous pyelograms revealed prompt function of both kidneys and an osteosclerotic lesion in the inferior ramus of the left pubis. Transurethral prostatic resection and bilateral orchiectomy were performed, and the pathologic diagnosis was adenocarcinoma of the prostate. The patient did well, was discharged, and Gantrisin® and stilbestrol were prescribed.

The patient was seen one year prior to his demise. He complained of "lack of pep" and of occasional bouts of increased frequency. His blood pressure was 220/120 mm. Hg, whereas previous blood pressures had been in the range of 150/90 mm. Hg. His pulse was 80 beats per minute, and there were some premature ventricular contractions. There were grade II fundoscopic hypertensive changes. There was bilateral gynecomastia. The heart was not enlarged. The right upper quadrant mass had not increased in size. The prostate was small, hard and nodular, with hardness in the area of the seminal vesicles. Urinalysis revealed many white blood cells and bacteria. The acid phosphatase was 0.32 and the alkaline phosphatase was 2.0 Bodansky units. Intravenous pyelograms were again normal. A barium enema and a gallbladder series were normal. A chest x-ray revealed questionable left ventricular hypertrophy, with right paratracheal calcification. The previous osteosclerotic lesion in the pubis was not seen. A diagnosis of essential hypertension was made, and the patient was treated with reserpine and hydralazine. When mild ankle swelling developed, chlorothiazide was prescribed.

At the final admission, the patient complained of right upper quadrant pain, increased size of the right upper quadrant mass, hematuria associated with the passage of pencil-thin blood clots, a 10-pound weight loss, and shortness of breath on exertion for the past month. The blood pressure was 160/90 mm. Hg, pulse 90 per minute and regular, and respirations 18 per minute. He appeared chronically ill. There was bilateral gynecomastia. The left border of cardiac dullness was 2 cm. lateral to the midclavicular line. The lungs were clear to auscultation and percussion. There was an irregular, hard, non-tender mass filling the right upper quadrant and extending to the midline and into the right lower quadrant. It moved with respiration. The liver was not felt. There was a small, easily reducible, non-tender left inguinal hernia. The prostate was firm and irregular. There was 2+ pitting edema of the ankles. Urinalysis showed a specific gravity of 1.020; acid; and no albumin or sugar. There was an occasional red blood cell on microscopic examination. Stool Meyer's was negative. The following day, the patient developed left anterior chest pain in addition to right upper quadrant pain.

Two days following admission, he became dyspneic at rest. The pulse was 150 per minute and regular, the respirations were 30 per minute, and the blood pressure was 140/95 mm. Hg. The neck veins were distended with the patient lying at a 45° angle. Hepatojugular reflux was present. Moist rales were heard in the left lung base posteriorly and laterally. Heart tones were faint, and there were no murmurs. The abdomen was distended and tympanitic, and the right upper quadrant abdominal mass was present. There was 2+ pitting edema of the ankles and legs. An electrocardiogram showed a supraventricular tachycardia of 150 and changes of an anteroseptal infarct, possibly recent.

Bed rest, digitalis and a mercurial diuretic were given.

On April 18, respirations were 26 per minute and labored. The pulse was 96 per minute. There were still a few rales in the left posterior base. The heart tones were distant, and the abdomen was distended. The legs were edematous, and the patient remained confused. The hemoglobin was 10.9 Gm. per cent, the hematocrit 37 per cent, and the white blood count 14,000/cu. mm., with 75 per cent polymorphonuclear leukocytes. The erythrocyte sedimentation rate was 91 mm./hr., the BUN was 28 mg./100 ml., the creatinine was 1.7 mg./100 ml., the total protein was 5.8 Gm./100 ml., the serum albumin was 2.7 Gm./100 ml., the serum globulin was 3.1 Gm./100 ml., and the alkaline phosphatase was 7.1 and the acid phosphatase 0.66 Bodansky units. A chest film showed numerous rounded infiltrates in the lower lung field, which were thought to represent metastatic neoplasm. The upper mediastinum was widened, and the heart was enlarged. No evidence of osseous metastasis was seen.

Four days following admission, an electrocardiogram revealed atrial fibrillation, with a ventricular rate of 93 and changes indicative of a recent myocardial infarction. The serum transaminase (SGOT) was 32 units. The patient was kept at bed rest, and the signs of cardiac failure seemed to fade. SGOT determinations were 16 units on April 20, and 30 units on April 21. On the tenth hospital day, the patient complained of more right upper quadrant pain, and was lethargic and disoriented. He required narcotics for relief of pain. During the next four days, he became progressively worse. Respiratory difficulty developed, and oxygen was given. On the twelfth, thirteenth and fourteenth hospital days, his fever spiked to 104-105°F., and he died on the fourteenth hospital day.

SUMMARY OF CLINICAL DISCUSSION

Mr. Russel Widner, senior medical student: This clinical pathologic conference is sponsored by the Iowa Chapter of the Student American Medical Association, and the participants this afternoon will be senior medical students and one junior medical student. Mr. Dennis Thoen will be the radiologist; Mr. Paul Willis will be the cardiologist; Mr. Allyn Mark will be the pathologist; and Mr. Dick Cheville will discuss the case. After Dick finishes, Mr. John DeGroote will present his differential diagnosis and the diagnosis for the junior students on medical ward C-32. Then, any contributions from the audience will be welcomed, and before the result of the autopsy is presented, I shall tell you the working clinical diagnosis made by the doctors caring for this patient.

Mr. Richard Cheville, senior medical student: This patient's story, I believe, is separable into four chapters, for each of his visits seems to me to have presented a different problem. Any story must start somewhere, and this one starts in Orthopedics with a femoral-neck fracture. Our patient, a 62-year-old retired mail carrier, was referred from the Department of Orthopedics, in March, 1954, to the Urology Department, complaining of a decrease in the size and force of his urinary stream. On rectal examination, he was also found to have an enlarged prostate and a 2 x 3 in. firm, non-tender, freely-movable mass in the right upper quadrant of the abdomen, which did not move with respiration. I think the first question to be asked is "What was that mass?"

What appears in the right upper quadrant? There are the liver, the gallbladder, the pancreas and the bowel. Since this mass didn't move with respiration, I think it must have been retroperitoneal. It could have been a fibroma, a lymphoma or a ganglioneuroma. However, a retrograde pyelogram was performed during this one of his visits, and it showed a mobile right kidney. A kidney that is mobile is often ectopic as well. I think that this man had nephroptosis, a fairly common condition that is usually discovered in following up the clinical finding of a right upper quadrant mass which is completely symptomless. It is more common in women than in men, but it occurs in about 2 per cent of males and is said to be from four to 10 times more frequent on the right side than on the left. This propensity to appear on the right side is more marked in women, but it also holds for men. Thus, I think the mass that was felt by the examiners in the Department of Orthopedics was, indeed, the right kidney. In this condition there is less than a normal amount of perirenal fat, and the kidney itself often sits in a peritoneal outpouching so that it is almost in the abdominal cavity.

Catheterization in the Department of Urology yielded a quarter of a liter of urine. There were no symptoms of infection at that time, and there was no report of finding white blood cells on urinalysis. A diagnosis of benign prostatic hypertrophy was made, and the patient was advised to undergo a transurethral prostatic resection. Apparently the suggestion evoked fear and trepidation, for the patient returned home from that visit untreated.

The man was next seen at S.U.I. Hospitals in February, 1956. The mass was unchanged, a finding which helps to confirm the diagnosis of ectopic kidney. He was complaining of nocturia and a further decrease in the force of his urinary stream. I think we could have predicted these complaints from the finding of benign prostatic hypertrophy on his previous visit. However, on this occasion he also had infection, for many white blood cells and 1+ protein were found on urinalysis. He also had five red blood cells per high-power field. I think that this finding alone needed cause no fear, for benign prostatic hypertrophy is often associated with hematuria, and indeed hematuria appears more often from this cause than from carcinoma

of the prostate in a man of this patient's age. The specific gravity was 1.014, and excretory urograms were reported as quite normal, indicating that kidney function was still good.

But something new had been added, for on rectal examination, a hard, nodular area was found on the right posterior aspect of the prostate. This was thought to be a malignancy, with an extension to the right seminal vesicle. Intravenous pyelography showed an osteosclerotic lesion in the left inferior pubic ramus. This finding firms the diagnosis of malignancy. The gentleman apparently had two diseases—benign prostatic hypertrophy and adenocarcinoma of the prostate. The latter was confirmed by tissue diagnosis during that visit. These two entities are not uncommonly associated, since the former—benign prostatic hypertrophy—occurs in about 80 per cent of males over the age of 55, and carcinoma of the prostate is found in 15 per cent of males over the age of 55. We also can see that by that time cure was no longer a reasonable possibility. He had local spread to the seminal vesicles, and there was a metastatic lesion in a distant part of the body—the pelvis. Treatment, therefore, could only extend life and ease the course of the patient's disease.

A transurethral resection was performed to ease the urinary obstruction caused by both the benign prostatic hypertrophy and the carcinoma. Treatment was also undertaken to alter the hormonal milieu of the tumor. Bilateral orchiectomy was performed to stop the release of testicular androgens into the blood stream. Carcinoma of the prostate is very often dependent upon the androgens for its growth and prosperity. He was also treated with stilbestrol, an estrogen, which depresses the growth of the tumor: Untreated men with carcinoma of the prostate live about 18 months, whereas those treated with this sort of therapy usually live about four years.

The patient entered the hospital again, complaining of lack of pep and of bouts of increased frequency of urination. The right upper quadrant mass again was unchanged. Physical examination revealed a blood pressure of 220/120 mm. Hg, and grade II fundal hypertensive changes. Premature beats were found during the examination of the heart. A chest film showed questionable left ventricular hypertrophy. Intravenous pyelograms done during that visit were reported as normal. There is no mention in the protocol of further studies to rule out specific causes for hypertension, so I assume that the most likely diagnosis is that the patient was suffering from essential hypertension —certainly not an uncommon disorder. He was treated for essential hypertension with hydralazine and reserpine. I think this diagnosis is vindicated by a blood pressure reading of 160/90 mm. Hg following treatment on his last admission one year later.

What had been the course of this man's prostatic disease since his last previous visit? On physical examination, the prostate was small, hard and nodular. It was thought that both seminal vesicles were involved, but one can't infer from the protocol that there was active malignancy in the prostate. A film of the pelvis was taken, and the previously-reported osteosclerotic lesion of the pelvis had disappeared. The lungs were clear radiologically. Acid phosphatase was reported as 0.32 Bodansky units, a finding that was well within the normal range of 0.15 to 0.7 units found in this hospital. Prostatic tissue is one of the highest sources of acid phosphatase in the body, the other being the red blood cells. Acid phosphatase is elevated in about 85 per cent of patients with untreated metastatic carcinoma of the prostate. It is a good index of the total mass of prostatically-derived cells in the body. Alkaline phosphatase was 2.0 Bodansky units—certainly within the normal limits of 1.0 to 2.5 units. Alkaline phosphatase reflects osteoblastic activity in the bone. Increased levels are associated in this disease with the osteogenic activity of the carcinoma cells. Thus, the increase found in carcinoma of the prostate is for the same reason that one finds an increase in alkaline phosphatase in such bone conditions as Paget's disease, osteomalacia or hyperparathyroidism. I believe that the patient's prostatic carcinoma was lying dormant in its altered hormonal environment. Bilateral gynecomastia, I think, is a good indication of the faithfulness with which the patient was taking his stilbestrol.

At the time of his final visit, he was a very sick man. There had been a marked increase in the size of the right upper quadrant mass, and he now complained of pain in association with it. He had gross hematuria and pencil-thin blood clots in the urine. He had had a 10 lb. weight loss during recent months, and had had shortness of breath on exertion for one month. On physical examination, the mass extended to the midline and into the right lower quadrant. It was hard, irregular and non-tender, and now moved with respiration. I don't feel that the mass was the immediate cause of this man's death, but it was a contributory factor, and a mass of this size must certainly be accounted for. Because of the story of its rapid growth and the man's report of a recent weight loss, that tumor must have been malignant. I think that this diagnosis is supported by the chest film which showed probable lung metastases.

I should like at this time to look at the films that were taken along the entire course of this man's disease. First of all, I should like to have a picture of the mobile right kidney and to ask how this diagnosis was made.

Mr. Dennis Thoen, senior medical student: This is the intravenous pyelogram taken six years prior to death, and it was recorded as normal. It shows a good example of a normal left renal pelvis. The right renal pelvis is not well visualized. The retrograde pyelogram taken three days later demonstrated what was reported as an essentially normal kidney. However, it had been in a slightly lower

position in the abdomen on the previous films. Our next film is a part of the same pyelogram. One sees the same left kidney displaced almost to the midline by the pressure applied to it by the examiner's hand.

Mr. Cheville: Can you show us where the osteosclerotic lesion was?

Mr. Thoen: This is the x-ray picture taken prior to the prostatic resection. It is a cysto-urethrogram showing an elongated, straightened and somewhat narrowed prostatic urethra compatible with the diagnosis of prostatic carcinoma. There is a sclerotic lesion in the descending ramus of the pubis on the left side compatible with the diagnosis of metastasis of prostatic carcinoma. Three years later, the same area was studied, and this sclerotic lesion was gone.

Do you wish to see the chest film?

Mr. Cheville: Yes, I should like to. The chest film apparently shows a pulmonary infiltrate consistent with metastatic disease. I should also like to ask whether this film shows any evidence of pulmonary infarction.

Mr. Thoen: No, it does not.

Mr. Cheville: Now, the causes for a mass in the right upper quadrant of the abdomen are myriad, and since this mass seems to me somewhat strange, I suppose we must consider most of them. What are the gastrointestinal causes? First of all, I shall consider gastric carcinoma, which is the commonest cause of massive carcinomatosis of the intraperitoneal cavity. This man had a decrease in his hemoglobin concentration, but had no history of gastrointestinal complaints, and a stool Meyer's test was negative. I don't know whether the test was repeated, but a negative stool Meyer's test, along with no gastric complaints, would appear to me to rule against this condition.

It might have been a tumor of the small bowel, but that lesion is fairly uncommon, and a tumor that was 15 to 20 cm. in diameter surely would have caused obstruction long before this time.

The patient gave no history of a change of his bowel habits or of rectal bleeding, and again, we have a negative stool Meyer's. Thus, I don't believe he had a tumor of the large bowel.

It could have been a carcinoma of the pancreas, but carcinomas of the pancreas on the right side of the abdomen are in the head of the pancreas. This disease presents with symptoms of biliary obstruction. In our patient no jaundice was reported, and we have the report of an alkaline phosphatase on this visit of only 7.1 Bodansky units.

How about carcinoma of the gallbladder? Perhaps, but 75 per cent of such lesions occur in women; 50 per cent of them have histories of previous gallbladder disease; and a gallbladder series had been taken a year earlier, on this patient, and had been normal. Carcinoma of the gallbladder is extremely rare in the absence of gallstones. On the other hand, half of the cases of this disease are fundal and need not cause obstruction of the biliary tract. Carcinoma of the gallbladder almost always involves the liver directly and through lymphatic channels. The liver was not palpable, so I don't think the mass was a carcinoma of the gallbladder.

Could prostatic carcinoma have accounted for the entire picture? I don't know whether anybody has made it an axiom, but I suppose it should be made axiomatic that when massive carcinoma is found in a man who has had a previous history of malignancy, one ought to consider that malignancy first. However, I don't believe that this was a prostatic carcinoma. The protocol says the prostate on this visit was firm, and there was no mention of enlargement on rectal examination. Radiographic examination on this visit showed no osseous lesions, yet in 95 per cent or more of men dying of carcinoma of the prostate, there is osseous involvement. The alkaline phosphatase was only 7.1 Bodansky units—minimally above normal limits. This malignancy almost never metastasizes to the peritoneal cavity. Sometimes it extends and/or metastasizes to the upper urinary tract, thus possibly accounting for the hematuria. However, I don't believe that this mass was metastatic carcinoma of the prostate.

It could have been a retroperitoneal tumor. It did move on respiration, but I imagine anything so massive would do so, and thus it could have been a lymphosarcoma or a fibrosarcoma. Though many of the rather slow-growing sarcomas can have blood-borne metastases to the lung that would be consistent with the x-ray picture, these are uncommon. I cannot rule them out, however.

It might have been a non-functioning adrenal carcinoma, although this is only a faint possibility. It could have been a transitional cell carcinoma of the ureter or of the renal pelvis, but these usually don't grow so large, and they are not so common as the neoplasm that is my primary diagnosis.

I think the right upper quadrant mass was a renal cell carcinoma or hypernephroma. This is a very common neoplasm accounting for 2 per cent of the malignancies reported in this country. It is twice as common in men as in women. It accounts for the pencil-thin clots in the urine, for blood in the upper urinary tract coagulates to form casts of the ureter, which are released through the urethra as pencil-thin clots. Renal cell carcinoma is associated with inanition, anemia, slight fever and hematuria, all of which were present. It metastasizes most often to the lungs, to the bones and to the brain, but it is a maverick among tumors, being highly unpredictable and capable of spreading to almost any site. Its average size on discovery is 3 to 15 cm. When I first considered this diagnosis, it seemed to me that the dimensions of this patient's tumor must be too large to meet those specifications, but upon measuring I discovered that a 15 cm. lesion would quite fill my own right upper quadrant.

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"nutrition...present as a modifying or complicat-
g factor in nearly every illness or disease state"[1]

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

rdiac diseases "Who can say, for example, whether the patient chronically ith myocardial failure may not have a poorer myocardium because of a moderate iency in the vitamin B-complex? Something is known of the relationship of vitamin the intercellular ground substance and repair of tissues. One may speculate upon effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic ıse."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

hritis "It is our practice to prescribe a multiple vitamin preparation to patients rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]
ndez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

gestive diseases Symptoms attributable to B-vitamin deficiency are com-ly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic mins to patients with hepatitis and cirrhosis is recommended by the National arch Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

generative diseases "Studies by Wexberg, Jolliffe and others have indi-l that many of the symptoms attributed in the past to senility or to cerebral arterio-osis seem to respond with remarkable speed to the administration of vitamins, icularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of g persons is lowered, even to the danger point, more than is the case in the average rican adult."[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

ectious diseases Infections cause a lowering of ascorbic acid levels in the na; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G A.: nce on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

betes Diabetics, like all patients on restricted diets, require an extra source tamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically inates a large amount of thiamin from the diet. . . . There is some evidence of ference with normal riboflavin utilization during catabolic episodes."[9]
n G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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I believe that the patient had a ptotic kidney with lessened perirenal fat so that the right kidney was already partially out in the abdominal cavity, a circumstance which helps to account for the movement of the tumor on respiration. The hypernephroma's propensity for growth into the renal vein and the inferior vena cava may account for part of the pedal edema that he experienced before this last visit. The left kidney appeared to be quite functional, and there was no sign of renal failure, since the urinary specific gravity was 1.020, the BUN was reported as 28 mg. per cent, and the creatinine was 1.7 mg. per cent.

Now, we shall turn to the immediate cause of death. Physical examination showed a blood pressure of 160/90 mm. Hg. The pulse and respiratory rates were not remarkable. The border of cardiac dullness was increased to the left. The liver was not palpable, and there was 2+ pitting edema of the ankles. A chest x-ray film showed cardiac enlargement. The patient reported exertional dyspnea, so perhaps he had a minimal amount of cardiac failure when he entered the hospital. On April 16, the day after admission, he developed left anterior chest pain. The next day, he was dyspneic at rest, his pulse rate had increased, and there was a 20 mm. drop in his systolic blood pressure. There was increased central venous pressure, as manifested by distention of the neck veins and hepatojugular reflux. There were moist rales in the posterior base of the left lung. The heart sounds became faint. There was increased ankle edema, and the abdomen was distended. These signs and symptoms suggest myocardial infarction.

We must consider some of the entities that need to be differentiated from myocardial infarction. Pancreatitis doesn't seem likely. The patient had had a normal gallbladder series the year before, and thus gallbladder disease is an unlikely possibility. I don't believe that he had pneumonia. Pulmonary infarction remains a strong possibility. It is characterized by sudden onset, right heart failure, marked venous distention, pulmonary rales and dyspnea. Less commonly, there is severe pain, but it does occur. Usually there is an increased pulmonary second sound with pulmonary infarction caused by an embolus. This finding was not described in this patient, but considering the tendency for renal cell carcinoma to grow through the renal vein into the inferior vena cava, one must regard a large tumor embolus to the lung as a strong possibility. The patient had no history of heart disease, but sudden infarction of the myocardium is not uncommon in a 60-year-old man. An electrocardiogram taken at that time showed supraventricular tachycardia and evidence of an enteroseptal defect. That may or may not have been present for a long time.

On the third hospital day, we find that he was clinically unchanged. The laboratory findings of leukocytosis, 75 per cent polymorphonuclears in a differential white count, and an increased sedimentation rate do not differentiate between pulmonary infarct and myocardial infarct. However on the fourth day, a second electrocardiogram was taken which showed atrial fibrillation and changes consistent with recent infarction. Arrhythmias are common in myocardial infarcts, and atrial fibrillation is the commonest of the arrhythmias. Extra systoles occur quite often. Both of these were found in this man.

I should like at this time to call upon our cardiologist, who will either confirm or throw out the diagnosis of recent myocardial infarct.

Mr. Paul Willis, senior medical student: First, I should like to say that if it seems that I speak with some authority, it is because I have consulted one, Dr. L. E. January.

This patient had four electrocardiograms available for study. One from an earlier admission was normal. The tracings for the last admission were made on the second, fourth and fifth hospital days. The first tracing in this series revealed some striking changes from the earlier, normal electrocardiogram. Normal sinus rhythm had been replaced by a supraventricular tachycardia; there was a loss of voltage in all leads; and representative right precordial leads were characterized by QS deflections and an associated elevation and coving of the RS-T segments and terminal negativity of the T-waves. These were unequivocal evidence of myocardial destruction, the overwhelming cause of which is infarction. This electrocardiogram localized the infarct as anterior in distribution. The exact age of an infarct often is not apparent from just one tracing. The two additional tracings in this series, made during the next three days, revealed atrial fibrillation and further changes in the ventricular complexes in the right precordial leads, indicating that the infarct was of recent origin.

The SGOT was reported as normal on the fourth hospital day. This finding indicates certainly that the infarction was older than three or four days on that date.

Mr. Cheville: As Paul has said, finally on the fourth day a transaminase determination was made. That was three days after the pain appeared. It measured 32 units, 8 to 40 being normal for this hospital. However, transaminase elevation in myocardial infarction is as evanescent as the increase in serum amylase during acute pancreatitis, and thus a normal reading 72 hours late doesn't rule out an infarction. In view of the electrocardiographic findings, I believe there was a myocardial infarct—coronary thrombosis being potentiated by a low hemoglobin concentration. Left and right heart failure followed. Atrial fibrillation caused further cardiac embarrassment. The patient was treated with digitalis and mercurial diuretics to little avail, and he grew gradually worse. Plasma proteins, particularly albumin, were low because of cachexia and loss of protein, especially albumin, to the ascitic and edema fluids. Respiratory diffi-

culty increased; his temperature spiked to 105°; and he died. I believe that during the last stage he developed hypostatic pneumonia from an opportunistic bacterium of low virulence.

My impressions as to the cause of death are:

1. Myocardial infarction followed by cardiac failure
2. Hypostatic pneumonia
3. Metastatic renal carcinoma
4. Dormant carcinoma of the prostate.

Mr. Widner: Mr. John DeGroote will present the diagnosis of the juniors on ward C-32.

Mr. John DeGroote, junior ward clerk: There doesn't seem to be much else to say. Considering the right upper quadrant mass, I think we might also include a pheochromoblastoma, although clinically the cardiovascular findings wouldn't go along with it. It is a possibility.

Renal tuberculosis is also a possibility, but in view of the rapid growth and the other findings that have already been shown, I should doubt that, too. I think that Mr. Cheville mentioned retroperitoneal tumors, and I should like to add to the list a lymphoma of some type or other. A right hydronephrosis is also a possibility, but I think that such a lesion wouldn't be so hard and irregular a mass as was found. I would say that our final diagnosis was a renal cell carcinoma with extension, such as Dick has already outlined. We would also say that this man probably had congestive heart failure before he had his myocardial infarction. We believe that the increase in the size of the heart was indicative of this, and we should like to see or to be told whether the patient had been on estrogens all these years.

Mr. Widner: He was on estrogens.

Mr. DeGroote: We should like to have everyone consider, then, that possibly the estrogen therapy, with the increased fluid retention, could have had something to do with the congestive failure. We agree with Mr. Cheville and Mr. Willis that the man had a myocardial infarction, and that he died of pneumonia. Our final diagnosis, then, is heart failure secondary to a myocardial infarction, pneumonia and renal cell carcinoma.

Renal cell carcinoma doesn't have to show up on an intravenous pyelogram. That is the biology of this tumor. There may be a small initial growth for several years, and then a massive growth. We feel that the first mass was, in fact, the renal carcinoma.

Mr. Widner: The clinical diagnoses made by the physicians caring for this patient were: renal cell carcinoma with widespread metastases; residual carcinoma of the prostate; a recent myocardial infarction; and congestive heart failure.

Mr. Allyn Mark, senior medical student: The main findings at autopsy consisted of a perforated chronic peptic ulcer of the duodenum, with secondary generalized peritonitis; a renal cell carcinoma; and a residual microscopic carcinoma of the prostate.

The perforated ulcer measured 1 cm. in diameter, and was located on the anterior wall of the duodenum just beyond the pylorus. There was some omentum adherent to the serosa over the ulcer, but the perforation was not sealed off. Microscopically, the ulcer had the textbook appearance of a chronic peptic ulcer, with the usual zones of necrosis and inflammation. There was enough active fibroblastic and endothelial proliferation to indicate that this ulcer had been present for at least several weeks. Moreover, deep in the base of the ulcer, there was enough mature scar tissue to indicate either that this man had had an ulcer earlier in life, with healing and subsequent reactivation several weeks before death, or that he had had an active ulcer for an unbroken period of several months before death.

There was 1,000 cc. of yellowish, foul fluid in the peritoneal cavity, and the serosa over the small and large bowel was dull and covered with fibrinocellular exudate. There were no cultures of the peritoneal exudate, but cultures of heart, blood and spleen yielded hemolytic Staphylococcus aureus. A gram stain of the peritoneal exudate revealed many colonies of gram-positive cocci. Death probably resulted from the peritonitis.

The renal cell carcinoma measured 15 cm. in diameter and weighed 830 Gm. It had almost completely destroyed and replaced the right kidney and filled the right renal pelvis. It had many areas of necrosis and hemorrhage typical of a hypernephroma, and like many others of these tumors, this one had invaded the right renal vein and was just beginning to extend into the inferior vena cava. There were also multiple metastases in the lungs. The periaortic and mediastinal lymph nodes were the sites of multiple metastases, and there were small, solitary metastases measuring several millimeters in diameter in both the pancreas and the pericardium. There was also a 3 cm. nodule of renal cell carcinoma in the lower pole of the left kidney. It is a matter of conjecture whether this represented metastasis or a second primary.

In the heart, there was a small, old anteroseptal infarct measuring 1 cm. in diameter, but there was no evidence of recent infarction consistent with the clinical and electrocardiographic findings. The autopsy report further stated that the coronary arteries were free from thrombi or atheromatous plaques. Over the right ventricle there was a fine fibrinous exudate which, for want of another explanation, I shall say resulted from the very minute pericardial metastases. There was only a small amount of clear serous fluid in the pericardial cavity. There was no conclusive evidence of congestive heart failure at autopsy. The lungs were not congested; the liver and the spleen were only mildly congested. There was, indeed, ascites and bilateral hemohydrothorax, but the ascites can easily be explained as a part of the peritonitis, and the hydrothorax as a reaction to the many metastases of the lung surface. Thus, we are left with

no lung congestion or collapse, and no pneumonia to explain this man's respiratory distress. He did have multiple pulmonary metastases, widened mediastinum, hydrothorax and probable limitation of diaphragmatic excursion from intense peritoneal irritation. In addition, he was receiving narcotics and was anemic. Any one or combination of these must constitute our only clue to the cause of his respiratory difficulty.

Other findings at necropsy consisted of microscopic residual carcinoma of the prostate with metastases in several regional lymph nodes along the lateral pelvic wall. There was bilateral gynecomastia as a result of the stilbestrol therapy.

I have some slides to show. This is a section of the chronic peptic ulcer, and shows the ulcer crater extending through the muscularis, with the regenerative mucosa at the margins. The details of the ulcer base are not well seen, but the active granulation tissue is located here, and the mature scar tissue deeper.

This section of the right kidney shows several glomeruli and the compressed renal parenchyma above, with the renal cell carcinoma below. Note the large pleomorphic carcinoma cells and several giant tumor cells.

This is merely a higher power of a similar area, and shows the clumps of the large pleomorphic cells with abundant eosinophilic cytoplasm and nuclei containing very prominent nucleoli. The stroma is almost nonexistent except for the thin-walled vascular channels.

This is a section of the pancreatic metastasis. It shows the dark-staining pancreatic acini below the metastasis. This is the only section we have that shows the clear cell variant with the cells arranged in masses rather than in clumps as in the primary. An interesting feature is the way in which this tumor pushed aside all exocrine portions of the pancreas and left multiple well-preserved islets scattered throughout the nodule.

This is a section of one of the smaller metastases in the lung, showing the alveoli here and the rather poorly differentiated renal cell carcinoma adjacent to and surrounding a small bronchiole. This metastasis is certainly not diagnostic of renal cell carcinoma, but other portions of the lung metastases were probably primarily from vascular spread, and this probably represents secondary extension to the peribronchial lymphatics.

This is a section showing pericardium with a segment of the circumscribed, poorly differentiated metastasis.

This is a section from the right ventricle showing normal cardiac muscle and the epicardium covered by fibrinous exudate, with a few inflammatory cells.

This is a section showing clumps of prostatic carcinoma cells forming an acinar pattern. This shows very well the perivascular lymphatic invasion by prostatic carcinoma having a somewhat different histological and cytological appearance of the cells.

Dr. R. H. Flocks, Urology: Were there any studies made of the bone marrow?

Mr. Mark: There was one section of bone marrow, but it didn't show any evidence of prostatic metastasis.

Dr. L. E. January, Internal Medicine: Were there metastases to heart muscle in the area of the old myocardial infarction, or only to the pericardium overlying the area?

Mr. Mark: Myocardial metastases were not seen.

Mr. Willis: I should like to put in a lick for the electrocardiogram, if I may. This man had his myocardial infarction prior to the tracing on the second hospital day, and he died 12 days later. I looked up the subject in preparing for this discussion, and I learned that experimental coronary artery ligation in dogs produces histologic change in heart muscle in about eight hours. Fibroblastic activity appears in about 48 hours, and obvious healing begins in about four days. Thus, it seems to me that a small infarct such as this one might be nearly healed in about two weeks, although I understand that larger ones require from five to eight weeks for healing. I don't feel that the pathologic finding is necessarily inconsistent with the electrocardiographic interpretation.

Dr. January: I believe the findings can be harmoniously resolved. This patient was shown at autopsy to have a healed anterior myocardial infarction. On the other hand, Mr. Willis predicted that he would be found to have had a recent one, and he gave clear reasons for his conclusion. He predicted the infarct from the QRS abnormality, and its recency from the associated RS-T segment and T-wave changes. Pericarditis, malignant or from some other cause, displaces the RS-T segment upward and introduces T-wave changes which in many ways are similar to those associated with acute myocardial infarction. On the other hand, pericarditis does not alter the QRS complex. Thus, in this patient the QRS changes were, in fact, due to a healed myocardial infarction, but the superimposed changes of malignant pericarditis made it seem that we were dealing with a recent infarct. The electrocardiogram hardly can be held accountable for failure to predict pericardial metastases. After all, it is not a cancer-detection test.

Dr. Flocks: First, I want to say just a few words with regard to the metastatic lesion. In about 3 per cent of patients with disseminated prostatic carcinoma, estrogen therapy and orchiectomy will produce the type of change seen here. It is interesting that various portions of the neoplasm seem to respond differently to changes in the hormonal environment. As we saw here, although the osteosclerotic lesion seems to have disappeared, the prostatic tumor remains in the prostate itself and in the regional lymph nodes. It would have been interesting to see what the histological picture was in that bone—whether or not the change was simply one of an alteration in the calcium deposition,

with tumor remaining in the bone, or whether all the tumor in that bone had actually disappeared. With regard to the tumor in the region of the right kidney, that right pyelogram is questionable, certainly. A hypernephroma or a space-occupying lesion in the right parenchyma surely should have been suspected. In recent years, we have had this type of surprise not infrequently. Our policy has been to explore more of these—to look at them and see whether or not there is a neoplastic lesion there, rather than a simple cyst or a simple ectopic kidney such as was diagnosed here.

Of course, this patient had multiple lesions, and later when he finally consented to an operative procedure, a definite diagnosis of prostatic carcinoma with dissemination was diagnosed.

Dr. Carl L. Gillies, Radiology: I should like to know what Mr. Thoen thought of the x-rays.

Mr. Thoen: For the purposes of the CPC, I described the films as they were originally reported. A few days ago when I asked Dr. Gillies for his opinion of the original pyelograms, he immediately pointed out the elongated and compressed lower calyx of the right kidney. This can be followed through on all of the pyelograms taken at later dates, but it is difficult to see and could easily be missed. One could not say that these films were diagnostic of anything, but rather that they should have aroused suspicion regarding the lower pole of the right kidney.

Mr. Widner: There is evidence that the hypernephroma may have been present for as long as six years.

Dr. R. F. Sheets, Internal Medicine: What does it mean that the contrast medium could be moved toward the midline by palpation?

Dr. Flocks: In the presence of a mass, for example, in that area, one must ask whether the mass it attached to the kidney or not. Is it a retroperitoneal mass, or is it an intraperitoneal mass? Now, an intraperitoneal mass could easily be moved by the examiner's hands, and the pyelogram would not move with it. The fact that the pyelogram moved as the examiner pushed the mass medially seemed to indicate that it was either retroperitoneal right close to the kidney, so that the kidney would move with it, or that it was actually part of the kidney and was not an intraperitoneal mass.

Dr. Edward E. Mason, Surgery: Dr. Flocks, would it do any good to explore the kidney without removing it?

Dr. Flocks: In days gone by, if nothing was seen in these cases and if enough was suspected on the basis of the pyelogram, it was felt wise to do a nephrectomy. Now, because we have found so many lesions that were not tumors, actual exploration and biopsy should be done, either with a Silverman needle or by means of an incision.

Mr. Widner: I should like to ask why this man in his middle sixties suddenly developed an exacerbation of his previously mild hypertension. There were no significant lesions found in the renal arteries.

Dr. Henry E. Hamilton, Internal Medicine: We have seen patients who developed severe hypertension while on massive doses of stilbestrol, with resultant hypertensive encephalopathy and cardiac enlargement. They were being treated for carcinoma of the prostate.

Dr. Flocks: Retention of fluid, hypertension and cardiac failure have been noted with large doses of estrogen. Whether these were the circumstances in this case, I don't know.

SUMMARY OF NECROPSY FINDINGS

The principal findings at necropsy consisted of generalized peritonitis secondary to perforation of a chronic duodenal peptic ulcer and renal cell carcinoma. The perforated ulcer was located on the anterior wall of the first portion of the duodenum. Although there was some omentum plastered around the ulcer, there was no actual walling-off of the perforation. Along with the fibrinopurulent exudate, there was 1,000 ml. of yellowish, foul ascitic fluid in the peritoneal cavity. The peritonitis is considered the immediate cause of death.

The renal cell carcinoma of the right kidney had invaded the right renal vein extending into the inferior vena cava. It had also metastasized to both lungs, pericardium, pancreas, and mediastinal and periaortic lymph nodes. There was a 3 cm. nodule of renal cell carcinoma in the left kidney also. Bilateral hydrohemothorax (500 cc. and 650 cc.) was present, probably representing a reaction to the metastases over the lung surfaces. Over the right ventricle, there was fibrinous pericarditis which was interpreted as a reaction to metastasis.

There was a small (1 cm.), old myocardial infarct in the anteroseptal region, but no evidence of a recent myocardial infarction. There was no conclusive evidence of congestive heart failure. The lungs were not congested, the liver and spleen were only mildly congested, and there was no peripheral edema.

Microscopically, there was residual carcinoma of the prostate, with metastases to the regional lymph nodes. Other findings consisted of gynecomastia, post bilateral orchiectomy, and acute hemorrhagic cystitis.

ANATOMICAL DIAGNOSES

1. Perforated duodenal ulcer with generalized peritonitis
2. Renal cell carcinoma (hypernephroma), right kidney, with
   a. Extension into right renal vein and inferior vena cava
   b. Metastases to both lungs, pancreas, pericardium, periaortic and mediastinal lymph nodes, and left kidney
3. Residual carcinoma of the prostate, with metastases to regional lymph nodes
4. Small, old, anteroseptal myocardial infarct
5. Acute hemorrhagic cystitis
6. Post bilateral orchiectomy
7. Gynecomastia.

Coming Meetings

In State

June 19-23	**Current Aspects of Internal Medicine (American College of Physicians).** Medical Amphitheater, University Hospitals, Iowa City
June 20-21	**Thirteenth Annual Health Education Workshop (Iowa State Department of Health).** ISU Memorial Union, Ames.
June 22-24	**Iowa Chapter of the American Academy of General Practitioners.** The New Inn, Lake Okoboji

Out of State

June 1-3	**Eye Muscle.** University of California, San Francisco
June 1-3	**Office Psychotherapy for General Physicians.** Center for Continuation Study, University of Minnesota, Minneapolis
June 1-3	**Physical Medicine and Rehabilitation for the Clinician.** University of Colorado Medical Center, Denver
June 2-5	**Latin-American Congress of Physical Medicine.** Lisbon, Portugal
June 3-11	**International Medical-Surgical Film Festival.** Turin, Italy
June 3-15	**International Medical-Surgical Meetings.** Turin, Italy
June 4-10	**Third World Congress of Psychiatry (Canadian Psychiatric Association).** McGill University, Montreal
June 5-9	**Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
June 5-16	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
June 5-17	**International Congress of Practical Medicine.** Grado, Italy
June 8	**World Symposium on Obstetrics and Gynecology.** Turin, Italy
June 8-11	**American Electroencephalographic Society.** Hotel Claridge, Atlantic City
June 9-11	**Society of Biological Psychiatry.** Hotel Claridge, Atlantic City
June 11	**Lederle Symposium.** Richardson's Mineral Springs, Richardson Springs, California
June 11-18	**American Society of Medical Technologists.** Olympic Hotel, Seattle, Washington
June 12-14	**American Neurological Association.** Hotel Claridge, Atlantic City
June 12-16	**Hematology.** Cook County Graduate School of Medicine, Chicago
June 12-23	**Gynecology, Office and Operative.** Cook County Graduate School of Medicine, Chicago
June 12-23	**Fractures and Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
June 12-23	**Neuromuscular Diseases of Children.** Cook County Graduate School of Medicine, Chicago
June 12-24	**European Institute of Scientific Studies for the Prevention and Treatment of Alcoholism.** Royal Institute for the Tropics, Amsterdam, Holland
June 14-17	**Eighth Annual Meeting of the Society of Nuclear Medicine.** Penn Sheraton Hotel, Pittsburgh
June 15-17	**Psychiatry for Physicians in General Practice.** University of California, San Francisco
June 15-18	**International Congress on Life Assurance Medicine.** Lisbon, Portugal
June 16-20	**American Dermatological Association, Inc.** Castle Harbour Hotel, Tucker's Town, Bermuda
June 17	**Horizons in Surgery.** Presbyterian Medical Center, San Francisco
June 17-18	**Office Surgery.** University of California at Los Angeles
June 18-20	**Maine Medical Association.** The Samoset, Rockland
June 19-21	**Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
June 19-21	**Intermountain Pediatric Society.** Challenger Inn, Sun Valley, Idaho
June 19-21	**Obstetrics and Gynecology "Principles of Human Genetics."** University of Colorado Medical Center, Denver
June 19-23	**Canadian Medical Association.** Montreal, Canada
June 19-23	**Advanced Electrocardiography.** Cook County Graduate School of Medicine, Chicago
June 19-23	**American Medical Technologists, Inc.** Cleveland
June 19-23	**Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago
June 19-26	**International Symposium for Prophlyaxis and Therapy of the Most Important Epidemics.** Grado, Italy
June 21-24	**American Proctologic Society.** Pittsburgh Hilton Hotel, Pittsburgh
June 22-23	**American Geriatrics Society.** New York City
June 22-23	**American Rheumatism Association.** Hotel Roosevelt, New York City
June 22-24	**Endocrine Society.** Hotel Biltmore, New York City
June 22-24	**Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
June 22-25	**American Therapeutic Society.** Essex House, New York City
June 22-26	**The 27th Annual Meeting, American College of Chest Physicians.** Commodore Hotel, New York City
June 23-25	**American College of Angiology.** Savoy-Hilton Hotel, New York City
June 23-25	**North American Conference on Infertility (International Fertility Association).** Barbizon-Plaza Hotel, New York City
June 24	**American Academy of Tuberculosis Physicians.** Henry Hudson Hotel, New York City
June 24-25	**American Diabetes Association, Inc.** Commodore Hotel, New York City
June 25	**Academy of Psychosomatic Medicine.** Barbizon Plaza Hotel, New York
June 25	**Association for Colon Surgery.** Barbizon-Plaza Hotel, New York City
June 25	**Society for Vascular Surgery.** Biltmore Hotel, New York City
June 25-28	**Conference on Medical Education for Foreign Scholars.** Rochester, New York
June 25-30	**The AMA's 110th Annual Meeting, "World's Fair" of Medicine.** Coliseum, New York City
June 26-28	**Western Branch, American Public Health Association Annual Meeting (jointly with U. S.-Mexico Border Public Health Association).** El Cortez Hotel, San Diego
June 26-30	**American Physicians Art Association.** New York City
June 27-29	**Society for Investigative Dermatology, Inc.** Barbizon-Plaza Hotel, New York City
June 28	**American Society of Facial Plastic Surgery.** Hotel Elysee, New York City
June 28-July 1	**British Paediatric Association.** Cambridge, England
June 28-July 1	**Idaho State Medical Association.** Sun Valley
June 29-30	**Cerebral Palsy.** University of California, San Francisco
June 29-July 1	**Society for the Study of Fertility.** Cambridge, England
June 30-July 1	**California Medical Assn. Postgraduate Institute for Sacramento Valley Counties, in cooperation with Stanford University School of Medicine.** Tahoe Tavern, Lake Tahoe
July 1-4	**International College of Surgeons, New England Regional Meeting.** Chatham Bars Inn, Chatham, Cape Cod, Mass.
July 2-7	**Annual Conference, American Physical Therapy Association.** The Palmer House, Chicago
July 9-15	**Association of Hospital and Institution Libraries, Division of the American Library Association.** Cleveland Public Auditorium, Cleveland
July 10-11	**Dermatology in Clinical Practice.** University of California at Los Angeles

(Continued on page 365)

Editorials

THE PHYSICIAN CAN REINFORCE INTEGRITY IN HIS FELLOW MAN

A recent news article reported a survey among high school students in a western city on the subject of cheating. In that high school, 65 per cent of the students admitted cheating, and 33 per cent said they saw nothing wrong in doing so. They attributed the practice of cheating to parental pressure for good grades, to the necessity for a good grade record for college admission, and to the fact that all of the other students cheated—a circumstance that somehow must be regarded as excusing the individual offender. If these findings are representative, they are a sad commentary on modern America.

Standards of conduct are determined by the mores of the society in which one lives. Unfortunately, in this country, youth has many examples of departure from high standards of conduct on the part of adults, and the news media characteristically publicize transgressions, rather than examples of virtue and integrity. Dishonesty among public servants and officers of our institutions has created disrespect for law and order. Cheating the tax collector has become smart practice. Almost anything is considered proper if one does not get caught at it. Yet, despite many indications of moral regression, it is a safe assumption that to the vast majority of people in America, truth, honesty, integrity and character have the same meanings and are accorded the same values as they were when this country was founded.

Concepts of right and wrong, of good and bad, of decent and indecent, of wholesome and unwholesome, are inculcated in each child by parental example and precept. There can be no equivocations by parents, if children are to learn that honesty is right and that dishonesty is wrong. Parents must imbue children with the principle that integrity is a basic quality of character and that dishonesty represents a lack of moral fiber. Somehow, youth must learn that the rules of life are more exacting than the rules of the game.

Conscience is the governor of human conduct. It has been defined as the sense of goodness or blame-worthiness of one's own conduct, intentions or character. Conscience implies a feeling of obligation to do or to be that which is recognized as good. The sensitivity of one's conscience is tempered by the idealism of his home, and its delicacy is quickened by his home, his school and his church.

The family physician has, perhaps, a greater influence on the family and the pattern of family life than any other individual. He can make no greater contribution to the families that he serves, or to society in general, than by putting constant emphasis upon the responsibilities of the home in character-formation. Having played a part in the development of the characters of the boys and girls within his sphere of influence will constitute for the doctor a reward beyond all measure.

A HERITAGE TO PRESERVE

In his inaugural address at the Biennial Conference of the New Zealand Branch of the British Medical Association and the 129th Annual Meeting of the British Medical Association, in Aukland, New Zealand, in February, Dr. E. G. Sayers talked on the subject "A Heritage to Preserve."* He expressed his philosophy beautifully, and what he said is as apropos for medicine in America as it is for medicine in the antipodes. Most physicians in this country, after reading his address, would exclaim, "Would that it were I who uttered such words."

Several excerpts seem unusually worthwhile, and are quoted verbatim. The last one is classic, and is reminiscent of Sir William Osler:

"There are certain things that have been handed down to us from the remote past—we alter them at our peril. Our own individual lives are short—pitifully short in the light of history—but while we live we have the responsibility of guarding the treasures of our heritage and handing them on unsullied and untarnished to those who shall follow us.

* * *

"From the time of Hippocrates with his famous Oath various codes of behavior have been enjoined on members of the profession. I have not a great deal of faith in any particular set of rules. A man may never be brought before the ethical committee and yet his life and practice may not bring honor to our profession. The heart of the matter is that it is profoundly important what sort of man practices medicine.

* * *

"In this suspicious, bitter, war-weary world the brotherhood of medicine is of great significance and there is probably no profession in the world, even including the Church, which is doing more for peace and understanding between nations.

* Sayers, E. G.: Heritage to preserve. BRITISH M.J., 1:1057-1061, (Apr. 15) 1961.

"In spite of the great advances in our knowledge of the causation of many diseases there are still enormous gaps in our knowledge. Supposing a young man came to your surgery and said, 'I want to live as long as I can and be as healthy as I can; what should I do?' The advice you could give him would be little different from what Hippocrates might have given him.

"I imagine you would say something like this. 'How long you live and what diseases you may acquire are to some extent genetically determined, and in the present state of our knowledge there is little or nothing we can do about it. Life is in any case uncertain, and in the world you live in, accidental death is always possible and all mankind might disappear in one violent cataclysmic atomic explosion. In any case, mere prolongation of life by a few years is not necessarily very important. The quality of life is more important than its length.'

"What would you advise him? In the light of present knowledge you would certainly advise him not to smoke; you would give him some general advice on diet, with special stress on keeping his youthful weight throughout his lifetime; you would probably advise the cutting down of animal fats. You would certainly stress the importance of regular daily exercise and adequate vacations spent in the open air. You might well discuss with him the importance of an adequate philosophy of life. Stress and strain and worry are inseparable from life itself. Health is bound up with the way one reacts to life's difficulties and problems. The human body is not at its best when pampered and coddled. Finally, you will explain that, from now on, health is something that has to be earned by individual effort, self-discipline, and character, and cannot be bestowed by Social Security or an Act of Parliament. You prescribe no wonder drugs, no vitamin capsules, no magic hormones—and your young man, like Naaman the Syrian told to wash in the river Jordan, will go out into the night sorrowful and disappointed."

CANCER LEAFLETS FOR LAYMEN

The Iowa Division of the American Cancer Society has material available for physicians to distribute to laymen. One of these describes the technic of self-examination of the breast in a very clear manner, and emphasizes the importance of the procedure without creating a cancer phobia.

Also available are pamphlets on cancer of other organs of the body.

The Cancer Society is distressed that there are so few calls for these leaflets. Doctors can secure them in any desired number by writing to the Cancer Society at 117½ North Federal Street, Mason City, or to any of the cancer information centers in cities throughout the state.

ATHLETE'S FOOT CAN BE SERIOUS

Epidermophytosis, or athlete's foot, is not always the benign condition that it is ordinarily counted upon to be. This is indicated by a report by Young and deWolfe* on recurrent lymphangitis of the leg associated with chronic fungus infection of the feet.

From 1950 to 1958, these men treated 25 cases of acute lymphangitis complicating dermatophytosis. All of the patients had recurrent attacks at intervals of weeks or months, and as the disease advanced, the recurrences took place at shorter and shorter intervals. The numbers of setbacks varied from two to 32, and most of the patients experienced "many" episodes of acute infection.

With each succeeding infection, there is an increase in the amount of residual lymphedema, and permanent swelling of the extremity may result. Lymph stasis increases the susceptibility to infection and recurrent attacks of lymphangitis.

The moist, warm, macerated skin and the fissures between the toes offer ideal portals of entry for bacteria. It is thought that most of the infections are due to streptococci, for those organisms can frequently be cultured from the lesions.

The attacks are characterized by an abrupt onset and a severe systemic reaction. There may be dull pain in the affected extremity, and it rapidly develops into acute pain. A severe chill and a high fever ordinarily initiate the attack. Headache, malaise, anorexia, and nausea and vomiting may occur. The regional lymph nodes are often swollen and tender. Frequently there are red streaks running along the lymphatic vessels. Red areas appear on the leg, and a considerable part of the limb may become red, hot and tender. Fever may persist for several days, and recurrent chills are common. The durations of the attacks vary from two to 14 days.

Acute lymphangitis of the leg may be confused with idiopathic recurrent thrombophlebitis. However, in the latter condition the onset is usually gradual, the fever is rarely over 101°F., chills are uncommon, lymphadenopathy is absent, the inflamed vein is ordinarily palpable, and no obvious portal of entry can be demonstrated.

The acute attack of lymphangitis will usually subside spontaneously within four to 14 days. There is a dramatic response to penicillin or penicillin-like antibiotics within one to three days. Additional therapy consists of bed rest, elevation of the extremity, and the application of warm, moist packs.

Recurrences can be prevented by eradicating the epidermophytosis through the long-continued use of undecylenic acid preparations, or in more resistant cases, an oral antifungal preparation may

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* Young, J. R., and deWolfe, V. G.: Recurrent lymphangitis of leg associated with dermatophytosis; report of 25 consecutive cases. CLEVELAND CLINIC QUARTERLY, 27:19-24, (Jan.) 1960.

be effective. Edema of the limb must be controlled between attacks by elevating the leg at night and whenever possible during the day. The patient should wear an elastic stocking at all times when he is up and about.

Epidermophytosis must be considered a potential portal of entry for serious infection, must be given serious attention, and must not be thought of as a benign condition having no more than nuisance import.

AUGMENTING COURAGE AND FAITH

There are many occasions when physicians are called upon to express sympathy, to offer encouragement, to strengthen waning hope, to augment courage and to inspire faith. Silence is eloquent in time of grief. Kindness and thoughtfulness and understanding are bulwarks in time of stress.

A short poem by Douglas Mallach is appropriate on many occasions, and perhaps it has a place in the physician's armamentarium:

Courage is not just
To bare your bosom to a sabre thrust
In sudden daring:
Courage is to grieve
O'er many secret wounds and make believe
You are not caring.

Courage does not lie
In dying for a cause.
To die is only giving:
Courage is to feel
The daily daggers of persistent steel
And keep on living.

DIET DEFICIENCIES AND FAILURES OF IMMUNIZATION

Dr. Robert E. Hodges, an associate professor of internal medicine at S.U.I., reported in Atlantic City on April 29, at the meeting of the American Society for Clinical Nutrition, on a link that he and Dr. William B. Bean have found between certain diet deficiencies and failures of immunization against tetanus and typhoid.

Deficiencies of two B-complex vitamins, pantothenic acid and pyridoxine, in human volunteers, he said, almost completely eliminated antibody responses to tetanus and typhoid immunizing agents, though no effects were noted on the formation of polio antibodies. Pantothenic acid is found in almost all foods, and pyridoxine is found in liver, fish, leafy vegetables and other foods.

Aside from helping to clarify the essentiality of some foodstuffs that have long been recognized as necessary in the human diet, the studies that Drs. Hodges and Bean are conducting are steps in the development of technics for temporarily eliminating antibody responses so as to facilitate organ transplants or to treat diseases that may be found to be caused by the presence of abnormal antibodies.

TEN PER CENT OF MICHIGAN PATIENTS HOSPITALIZED TOO LONG

Nearly 10 per cent of all patients in Michigan hospitals in 1958 stayed too long, running up $15 million in unnecessary bills, but nearly seven per cent didn't stay long enough. And while three of four Michigan families have some kind of prepaid or private health insurance, they still pay two-thirds of their health care bills directly out of their own pockets.

These are among the findings of a study of hospital and medical economics in Michigan conducted by the University of Michigan, as reported in a WALL STREET JOURNAL news story on May 15. The study has been conducted over the past three years with grants totaling more than $380,000 from the W. K. Kellogg Foundation. Complete findings will be published later this year.

The study of the hospitals started with an analysis of about 11,000 medical records of patients discharged from 47 of the state's 237 general hospitals in 1958. Over half the records—5,750 of them—were used to measure "hospital effectiveness," following standards set up by panels of physicians. The analysis was limited to 18 types of illnesses which account for about 47 per cent of hospitalizations and 38 per cent of total days of hospital stay in Michigan.

Whenever the length of hospital stay in one of the 5,750 cases fell outside the broad limits established by the professional panels, an individual interview was conducted with the doctor involved by a University of Michigan physician. More than 1,700 such cases were reviewed.

Another study of how people pay for medical care was made from a survey of more than 1,000 Michigan families.

The researchers found that 9.6 per cent of all patients stayed in a hospital too long, and that 6.8 per cent left too early. From a medical standpoint, the researchers said, "understay" is more serious that "overstay," since it indicates that the patient didn't receive the minimum level of care for his illness, as determined by the professional panels. But from a financial standpoint, "overstay" is more important.

For the 18 illnesses studied, overuse totaled 200,000 patient days in Michigan in 1958, and underuse 70,000 days. "These diagnoses alone cost $6 million too much and $2 million too little, respectively, applying the average cost of $30 per patient day for Michigan hospitals in 1958 to these days of ineffective hospital use," the study said.

Projecting these same rates of overstay to all patient illnesses in all Michigan hospitals indicates "the total bill for unnecessary care in Michigan

is probably close to $15 million," the study noted. And it added: "Since Blue Cross covers half the hospitalized population, elimination of overuse might mean a saving of about $7,500,000 annually, a significant contribution towards overcoming its current deficits."

The survey estimated that underuse of facilities could be estimated at around $5,000,000. "Providing minimum care for these cases might add about $2,500,000 to Blue Cross charges," the report said. "Thus, the net saving to Blue Cross from eliminating both underuse and overuse would amount to about $5 million."

Michigan Hospital Service (Blue Cross) has been in financial trouble in recent years, like most other Blue Cross plans around the nation. It recently was granted a 20 per cent rate increase, effective June 1, after arguing that it would run a deficit this year if the rise weren't granted.

The study also found that who paid the bills made a difference in how long the patient stayed in the hospital. "When the patient footed the entire bill himself, understay (16.7 per cent) was far more common that overstay (6.3 per cent). When the bill was paid by any other agency, whether or not the patient participated, the reverse held true: overstay (11.8 per cent) was twice as common as understay (5.6 per cent)."

Here is how the source of payment related to the length of hospital stay:

Major Source of Payment	*Average Length of Hospital Stay*
Private voluntary insurance	6.3 days
Patient	7.0 days
Blue Cross-Blue Shield	7.4 days
All other sources, combinations	10.5 days

Patients whose bills were paid by several different agencies received two to three times as much diagnostic x-ray service and 1½ to two times as much laboratory service as those who had only a single source of payment.

The survey showed that although approximately four-fifths of the costs of hospitalization are met through insurance, prepayment and other outside sources, less than one-fifth of the doctors' bills are paid that way.

Attend the
AMA ANNUAL MEETING
at the
COLISEUM
New York City
June 25-30, 1961

SOCIAL SECURITY FACTS HAVE BEEN DISTORTED AND MISREPRESENTED

The truth about this country's social security program has been distorted and misrepresented to the American people and "important political and economic consequences" may result when the facts are ultimately understood, according to an insurance actuary writing in the April 8 issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The article, entitled "The Coming Din of Inequity," was written by Ray M. Peterson, vice president and associate actuary of the Equitable Life Assurance Society of the United States.

Peterson declared that:

1. The public is being given the false impression that the method of financing the social security program possesses many of the unique characteristics of voluntary private insurance which the people have learned to value highly.

2. The program has been misrepresented as being a "time-tested" and "tried and proved" system of financing old age benefits.

3. The people are being given the mistaken impression that social security benefits are paid out of accumulated reserves, similar to private insurance programs, when in truth the program is financed almost entirely on a pay-as-you-go basis with benefits paid out of current income.

He said that a national old age pension program can be financed on a pay-as-you-go basis, a full-reserve basis, or some combination of the two.

Full-reserve financing is a "prepaid system" in which benefits are fully paid for during the years before they are received, he said.

"Full-reserve financing in the field of private insurance is the test of actuarial soundness and it is the only concept of actuarial soundness with which the American people are generally familiar," Peterson said.

He pointed out that under private insurance, all money paid into the insurance fund together with all income from investment is sufficient to pay all promised or guaranteed benefits.

Pay-as-you-go, on the other hand, means that the government raises through current taxes just enough money to pay the cost of benefits currently due, he said.

"No reserve is accumulated, no element of prepayment is involved," he said. "Money is raised as and after payees become eligible to receive benefits. In this latter sense, 'pay-as-you-go' is really a postpaid system of financing."

PRIVATE ANNUITIES WOULD BE CHEAPER

Peterson declared that the 80 per cent of social security taxes paid for the old age pension portion of the program (20 per cent going to survivor and disability benefits) would buy for new entrants 40 to 60 per cent more in old age benefits under an insurance company group annuity program.

He pointed out that from 1956 through 1965, tax collections for the program will total $115.1 billion while benefits and expenses in that period will total $114.5 billion.

"These figures clearly show that we are now almost completely on a 'pay-as-you-go' or 'hope as you pay' basis," he said.

He said the true nature of social security financing is also "vividly reflected" by the gap between the value of benefits owed to current beneficiaries and the amount of money in the trust fund.

If taxes paid into the fund had been stopped by Congress last year, Peterson said, the $20.2 billion in the fund would have paid only 23 per cent of the $88.3 billion of obligations to current recipients.

And if tax contributions are cut off in 1965, he said, the estimated $23.1 billion which will be in the fund will pay only 20 per cent of the $114.2 billion of benefit indebtedness owed to the then current beneficiaries.

There would be nothing left over for the millions who had paid taxes to the program but had not yet qualified for benefits, he said.

Peterson stressed also that young workers and those who enter the labor market in the future, together with their employers, will pay more in taxes than the workers will receive in benefits because they must bear a growing burden of indebtedness. This indebtedness arises, he said, from the fact that most present workers and those now receiving payments will have contributed, together with their employers, a great deal less than the actual obligations.

He said there is a "dawning realization" that Americans have but one choice—to pay interest on this debt "forever" since the only way to reduce the debt is for a given generation to build up a huge reserve over and above present payments solely to meet program obligations. "To expect this to happen is to be politically and economically unrealistic," Peterson said.

He said the debt arising from these unearned benefits has climbed from $150 billion in 1952 to about $300 billion under the existing program. It will rise even higher, he said, if Congress adds to the program without a tax increase high enough, as to present workers, to meet the additional cost.

THE SOCIAL SECURITY PROGRAM ISN'T INSURANCE

Peterson quoted several public figures who have likened social security to pre-paid private insurance. These include President (then Senator) Kennedy who had called social security a system of paid up insurance and a way of saving money for old age so the elderly won't be a burden to their children.

He said there "is no foundation for these inaccurate parallels" with private insurance.

"Indeed, there is desperate need to dispel these self-mesmerizing, foggy concepts," Peterson said.

He pointed out also that "with no reserve fund in sight to reduce the debt" created under the social security program, "the burden being passed on to future generations is permanent. It is not something that will somehow work itself out, or go away; it is not an actuarial fantasy."

Peterson said that adding medical care to the Social Security System for the present aged would alter the original concept that each person must contribute for a minimum period of time before he is entitled to benefits.

Furthermore, he said, under the Administration social security program, or similar proposals, medical care would add between $20 and $30 billion to "the permanent social security debt on which future generations and their employers would need to pay interest forever."

Peterson said the main purpose of his article was to "show that there are excellent reasons for grave concern as to the probable ultimate effects of continued distortion and misrepresentation by interpreters of the Social Security Act, by statements of inadequately informed members of Congress and even by publications of the Social Security Administration itself."

"Will the youngsters of the future protest what the oldsters of this generation have voted for themselves? During the decade ahead, will we oldsters, as we seek to enjoy our social security benefits, hear a rising clamor of unfairness—a din of inequity?"

Coming Meetings

(Continued from page 360)

July 10-13	**External Ophthalmology (Univ. of Colorado Medical Center).** Estes Park, Colorado
July 10-14	**Symposium for General Practitioners on Tuberculosis and Other Pulmonary Diseases (American Thoracic Society, Saranac Lake Medical Society and Adirondack Counties Chapter of the N. Y. State Academy of General Practice).** Saranac Lake, New York
July 12-14	**Conference on Strabismus.** Presbyterian Medical Center, San Francisco
July 12-16	**Advanced Seminars in Dermatology.** University of California, Los Angeles
July 14-15	**Infertility.** University of California, Los Angeles
July 16-19	**Advanced Seminar on Fertility.** University of California, Los Angeles
July 24	**Lederle Symposium.** The Plains Hotel, Cheyenne, Wyoming
July 24-28	**Cardiopulmonary Problems in Children (American College of Chest Physicians).** Brown Palace Hotel, Denver
July 27-29	**Dermatology for the General Practitioner.** University of Colorado Medical Center, Denver

PRESENTATION OF AMEF CHECK

On April 23, at the opening session of the IMS Annual Meeting, Dr. George H. Scanlon, of Iowa City, as representative of the American Medical Education Foundation, presented a check for $15,776.82 to Dean Norman B. Nelson, representing the S.U.I. College of Medicine. That was the whole of the S.U.I. medical school's share of the national collections, the money contributed by Iowa physicians and their wives being no more than a part of it.

Dr. Scanlon, shown at the left in this picture, was subsequently chosen president-elect of the Iowa Medical Society.

THIRD HAWKEYE SCIENCE FAIR WAS BIGGEST YET

At the Third—and so far the largest—Hawkeye Science Fair, held at the Veterans Memorial Auditorium, in Des Moines on April 7-8, there were 325 student exhibitors, and the displays showed everything from snails to space ships. The joint sponsors, as in previous years, were Drake University, the Des Moines Register and Tribune Company, and the Iowa Medical Society.

Two youngsters won $400 college scholarships and expense-paid trips to the later National Science Fair, in Kansas City, Missouri. They are Ronald Gilson, 16, of Marshalltown, a high school junior, whose exhibit was entitled "Amazing Extracts of Helix Aspersa" (first prize in the Biological Sciences Division); and Gary F. Barton, a junior at Roosevelt High School, Des Moines, whose exhibit was called "Design Testing of Reentry Vehicles in a Two-Dimensional Supersonic Wind Tunnel" (first prize in the Physics Division).

Gilson, who had succeeded in isolating some antigens, amino acids and enzymes in his chemical analyses of ground-up snails, told reporters, "I've considered going into medicine, but I think I'll go into research more—that's what I like best."

The top winner in the junior high division—a new division this year—was another wind-tunnel builder, Doug Kozel, of St. Edmond High School, Fort Dodge. Three-hundred-dollar scholarships, each, were awarded to Karen Solberg, of Des Moines Roosevelt, for the exhibit "Motion and Sanseveria Plants," and Gary Manns, of Albia, for the display "Research on an AC Single-phase Conduction Pump." Scholarships of $200 each went to Linda Riordan, of Norwalk, for the exhibit "Nutritional Investigation of Kelps Component of Single- and Multi-Celled Animals," and to Larry George Neuweg, of West Point St. Mary's for his display "Astrophotography With Student-Constructed 8-in. Reflector."

The Navy's five-day science cruise was awarded to Charles Boast, of Ames High School, for his exhibit "Electric Sound." A special health award of $50 from the Iowa Division of the American Cancer Society was presented to M. Jane Bartley, of Des Moines Roosevelt, for her exhibit "Effect of Temperature on Carrot Tumors," and a second award of $35 went to James Thompson, of Waukee, for his "Studies in Autoimmunity."

In addition, there were a great many smaller cash awards and merchandise prizes.

AMA MILITARY MEDICINE SECTION ANNUAL PROGRAM, NEW YORK CITY JUNE 27-29

The program of the Section on Military Medicine at the AMA Annual Meeting in New York, June 27-29, will feature a panel discussion of Medical Support in Space Medicine, but a wide variety of other topics will be covered, ranging from live polio vaccine to hearing conservation. A joint meeting with the Section on Preventive Medicine will open the final day's program. All sessions will be held at the Park-Sheraton Hotel.

The Tuesday afternoon program (June 27) will include the chairman's address, "Our Mission—Our Trust," by Brig. Gen. James H. Kidder, MC, USAR; a panel discussion, "Medical Support in Space Medicine," and a film presentation introducing the members of today's missile family; and individual presentations on "Biomedical Support of Our Current 'Man in Space' Program," "An Approach to the Biomedical Support Requirements Anticipated in the Space Era," "Research Trends Anticipated as Essential to Man's Conquest of Space," and "Considerations in Testing for Intellectual Impairment Due to Acceleration."

The Wednesday afternoon program (June 28) will include papers on "Contributions of Germfree Research to Military Medical Problems," "Experiences With Peritoneal Dialysis," "Mannitol Diuresis Therapy for Refractory Ascites and Edema," "Physiological Responses of Man to Arctic Living," and "Energy Requirements in Hot Climates."

At the Thursday morning session (June 29)—the joint meeting with the Section of Preventive Medicine—the titles of the presentations will be "Live Polio Vaccine," "Epidemic Non-Icteric Hepatitis," "Effects of Adenovirus Vaccine on Acute Respiratory Disease in U. S. Army Recruits," "Medical Aspects of Industrial Uses of Radioactive Isotopes," "Aviation Medicine Consultation Problem Cases," "Medical Contraindications to the Use of the Standard Life Jacket for Survival," "Toxicity Problems With Missile Propellants," and "Hearing Conservation in the U. S. Navy."

LAW-SCIENCE INSTITUTE IN THE ROCKIES

The Law-Science Institute of America, with headquarters at the University of Texas, in Austin, will offer a nine-weeks seminar in "Legal Medicine and Elements of Medicolegal Litigation" for the benefit of lawyers and physicians interested in personal-injury problems, at Crested Butte, Colorado, June 12-August 11, 1961. Each week is a course in itself, though nothing is to be repeated.

IMS GENERAL PRACTITIONER OF THE YEAR

Dr. Harold A. Housholder, who has practiced medicine in the same office in Winthrop throughout the past 49 years, became the tenth recipient of the General Practitioner of the Year Award at the Society's Annual Meeting this year. He will also be Iowa's candidate for national practitioner of the year.

Through the years Dr. Housholder has worked to improve People's Hospital, in Independence, has been one of its trustees for 20 years and a member of the medical staff from the time it was organized in 1922. He also is a staff member of Delaware County Memorial Hospital, at Manchester.

Dr. Housholder has been active in civic work also: 15 years on the town council; 15 years on the school board (12 of them as president); and commander of the Winthrop American Legion post.

Crested Butte is a quaint mining town 26 miles north of Gunnison, high in the Rockies. After acquiring Union Hall there, a few years ago, the Academy completely remodeled it, making it into an excellent teaching plant. In that tranquil setting, favorable to a concurrent family vacation, a constantly experimental, ever-changing instructional program has been set up.

This past year, Dr. A. Earl Walker, professor and chairman of neurological surgery at Johns Hopkins, has been president of the Academy, and currently Dr. Stephen R. Lewis, Jr., chief of the Division of Plastic and Maxillofacial Surgery at the University of Texas Medical Branch in Galveston, is president.

Physicians are cordially invited to attend, and requests for further information will be welcomed. Address Mr. Hubert Winston Smith, chancellor, Law-Science Institute, Austin 12.

President's Page

Greetings!

I should like to ask questions:

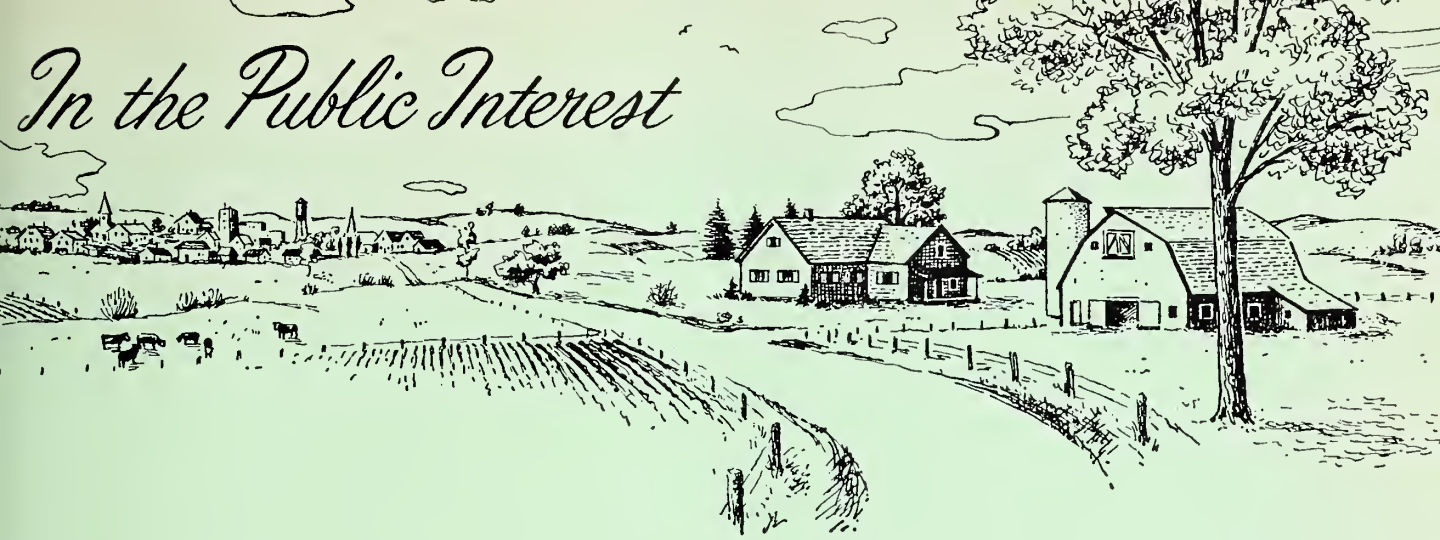
Does the overwhelming amount of money distributed by the Department of Health, Education and Welfare and other government agencies for research purposes bother anyone?

Is this one method being used by the social do-gooders to lull the rest of us into a position of impotence?

Does not the wholesale distribution of federal moneys as grants-in-aid tend to discourage private enterprise from continuing its previous large contributions for research?

Do federal moneys so distributed promote the best in research?

President



The General Assembly Dealt Rather Satisfactorily With

Health Legislation in 1961

Kerr-Mills Implementation. An excellent enabling act, HF470, became law, but no appropriation was voted. On this topic, more will be said later in this article.

The Dog Bill. Unwanted dogs were made available for research and teaching purposes through the passage of SF210.

Hospitals and Nursing Homes. The adoption of SF148, 149 and 327 permits hospitals to operate nursing homes, provides for the nonpartisan election of hospital trustees, and entitles hospitals to no less than their costs for the care of indigent patients. A limitation was put upon the issuance of restricted hospital licenses to institutions that can provide only limited types of care (SF283), and the adoption of HF703 authorized the issuance of general obligation bonds to finance county hospital improvements.

The governor vetoed HF397, which would have exempted county homes from nursing-home licensure, and HF262, to authorize counties and municipalities to operate nursing homes, failed in the Senate.

Alcoholism. A commission on alcoholism was created within the State Department of Health (HF288). No funds were voted for that body, but some money was provided to the University Psychopathic Hospital for research in alcoholism.

Blind. Of the five measures adopted for the benefit of the blind, the one with clearest medical implications is SF187, which authorizes the Commission for the Blind to operate a center or centers for the blind.

Social Welfare. The enactment of SF399 permits the payment of Old Age Assistance while the recipient is a patient in a public hospital. Federal law, however, forbids such payments to a TB or to a mental patient.

Medical Examiner. Technical changes were made in the Medical Examiner Law by the passage of HF96.

Mental Health. The passage of SF316 permits Board of Control institutions to employ consultants, and the enactment of SF315 permits the transfer of patients from one institution to another. Under the provisions of SF313, which are now law, three qualified psychologists must approve the release of a criminal sexual psychopath. The mental health bills that failed include one that would have financed new community mental health centers (HF391), and one relating to the inspection of mental hospitals (HF430, SF254).

Disease Control. A swine brucellosis bill (HF-584) became law, but a rabies control bill (HF-594) failed to reach the calendar, as did one that would have authorized the establishment of "VD clinics" for persons now required to go to a county "detention hospital" (HF503).

Non-medical Groups. Chiropodists got their name changed to "podiatrists" (HF121), and secured legislation requiring two years of college for entrance to schools of chiropody (HF70), but they failed to gain the right to participate in Blue Cross and Blue Shield.

The Board of Dental Examiners was authorized to employ an inspector (SF47). The Pharmacy Act was amended to prohibit pharmacists from selling any prescription-legend drug without a prescription (SF9). A proposal to increase the penalty for narcotics violations (SF11, HF559) was not voted upon in the Senate. Two Veterinary Practice Act amendments (HF424 and HF284) did not come up for votes.

Radiation. X-ray machines for fitting shoes were outlawed (SF39). The radiation-control bill (HF-637) was not voted upon in the Senate.

Automotive Safety. None of the proposals on this subject were passed.

School Health. The General Assembly passed neither the bills that would have required physical examinations of school employees, nor the one that would have authorized county school boards to employ nurses.

Legal. A bill that would have permitted the establishment of corporations through which self-employed physicians and other practioners could participate in pension plans was not voted upon (HF417), and the one that would have invalidated any release of liability for personal injury obtained from a patient in a hospital (SF402) had a similar fate. The proposal under which the losing party in a civil action would have to pay the attorney fees and other expenses incurred by the winner (HF419, SF309) was indefinitely postponed.

Workmen's Compensation. The only one to pass, of the 10 or more bills on this subject, was that which clarified the definition of *step-parent* (SF-264).

County Boards of Health. A bill which would have authorized city-county or multicounty health departments failed (SF343, HF538). However, HF61 became law, providing that counties with 150,000 or more people shall have boards of health, each consisting of the chairman of the board of supervisors, the county auditor, the county superintendent of schools, and four other people, not more than two of whom shall be practitioners of the healing arts.

HALF A LOAF IS BETTER THAN NONE

The Kerr-Mills enabling act (HF470 as amended and adopted) is highly acceptable to the Iowa Medical Society. It expressly provides for the preservation of professional freedom, for local control and for professional determination of medical need. It sanctions the use of a fiscal agent and the establishment of a council to advise the Department of Social Welfare in administering any program set up under the terms of the act.

The General Assembly made two minor changes before adopting the measure that the Iowa Medical Society sponsored: (1) It reworded the passage authorizing the employment of a "fiscal agent" without appreciably changing the meaning. (2) It added a clause providing for the automatic suspension of any provision of the act that might be found to conflict with federal requirements and thus might make Iowa ineligible to receive federal funds under the terms of the Kerr-Mills Act.

There can be no question that it is far better to have this sound law on the statute books, even without funds, than to have to start all over again to get both an enabling act and an adequate appropriation from the General Assembly in 1963.

The immediate value of the passage of HF470 is its probable salutary effect upon the existing "Vendor Payment Program." Late last summer, Medical Society representatives were told by the chairman of the State Board of Social Welfare that the use of Blue Shield as fiscal agent for the Vendor Payment Program would not be considered until after the General Assembly had adjourned. Subsequently, during the legislative session, a two-day debate in the House of Representatives on HF470 made it clear that a majority of legislators favored a maximum of local control for medical welfare programs, and were quite willing to have the Board of Social Welfare use a private organization to process the claims. Moreover, the term of office of the chairman of the Board is to expire on July 1, and he is to be succeeded as a member of that body by a legislator who has had years of experience in the House and Senate. There is good reason to think that an era of improved cooperation and mutual confidence between physicians and state welfare officials is about to commence.

THE LEGISLATURE CHOSE TO KEEP THE BUDGET BALANCED

The representatives of the Iowa Medical Society and of other organizations in the health field worked very hard to secure an adequate appropriation for the Medical Aid to the Aged program, and they regret their lack of success.

They initially recommended an appropriation of $4 million per year. Governor Erbe recommended approximately $2 million per year, to be financed from the Korean Bonus surplus. When it subsequently became apparent that the Bonus surplus could not be so used, MAA had to compete with many other good causes for the $2-3 million that might be available without a tax increase.

It was wise to seek an enabling act and an appropriation separately, since a combination of the two would probably have been defeated in the Senate. Funds simply were not available, for the Senate proved adamant both about holding the line on expenditures and about refusing to raise taxes.

At no time did Medical Society representatives say that they would not push for an appropriation for MAA.

During the final three days of the session, a major effort was made to get an annual appropriation of $420,000, which together with federal matching funds would have financed a pilot program costing $1 million per year. The question came to a vote in the Senate on the day before adjournment, and lost by a count of 21 to 17.

CONCLUSIONS

1. By enacting HF470, the General Assembly intended to and did go on record as supporting the Kerr-Mills approach to the providing of health care for the aged.

2. The actions that it took on most of the other health issues brought before it were commendable.

3. The prospects for satisfactory administration of the Vendor Payment Program have been greatly enhanced.

4. The General Assembly would have appropriated funds for MAA if it had felt that the need for such a program was great and if it could have done so without indulging in deficit spending. It should be praised, rather than condemned, for staying within its budget.

5. Prospects for obtaining an appropriation in 1963 to implement the fine enabling act passed this year are *good.*

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

SYMPTOM DIAGNOSIS, by *Wallace Mason Yater*, M.D., and *William Francis Oliver*, M.D. (New York, Appleton-Century-Crofts, Inc., 1961. $15.00).

A PRELUDE TO MEDICAL HISTORY, by Félix Martí-Ibañez, M.D. (New York, MD Publications, Inc., 1961. $5.75).

THE GOLDEN AGE COOKBOOK, by *Phyllis MacDonald* (New York, Doubleday & Company, Inc., 1961. $2.95).

ADRENERGIC MECHANISMS—CIBA FOUNDATION SYMPOSIUM JOINTLY WITH COMMITTEE FOR SYMPOSIA ON DRUG ACTION, ed. by *J. R. Vane*, D.Phil., *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P., and *Maeve O'Connor*, B.A. (Boston, Little, Brown and Company, 1960. $12.50).

ESSENTIAL HYPERTENSION, AN INTERNATIONAL SYMPOSIUM, ed. by *K. D. Bock* and *P. T. Cottier*. (Berlin, Springer-Verlag, 1960. $8.45).

METABOLIC EFFECTS OF ADRENAL HORMONES (Ciba Foundation Study Group No. 6), ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P., and *Maeve O'Conner*, B.A. (Boston, Little, Brown and Company, 1960. $2.50).

THE CHANGING YEARS, by *Madeline Gray*. (New York, Doubleday & Company, 1958. $.95).

THE FAMILY HANDBOOK OF HOME NURSING AND MEDICAL CARE, by *I. J. Rossman*, M.D., and *Doris R. Schwartz*, R.N. (Doubleday & Company, Inc., 1958. $1.45).

A MANUAL OF CUTANEOUS MEDICINE, by *Donald M. Pillsbury*, M.D., *Walter B. Shelley*, M.D., and *Albert M. Kligman*, M.D. (Philadelphia, W. B. Saunders Company, 1961. $9.50).

CLINICAL DISTURBANCES OF RENAL FUNCTION, by *Abraham C. White*, M.D. (Philadelphia, W. B. Saunders Company, 1961. $10.50).

HANDBOOK OF SURGERY, ed. by *John L. Wilson*, M.D., and *Joseph J. McDonald*, M.D. (Los Altos, Calif., Lange Medical Publications, 1961. $4.00).

HANDBOOK OF PEDIATRICS, FOURTH EDITION, by *Henry K. Silver*, M.D., *C. Henry Kempe*, M.D., and *Henry B. Bruyn*, M.D. (Los Altos, Calif., Lange Medical Publications, 1961. $3.50).

THE HOUSE OF HEALING: THE STORY OF THE HOSPITAL FROM BABYLON, EGYPT, GREECE AND ROME TO THE GREAT MEDICAL CENTERS OF TODAY, by *Mary Risley*. (New York, Doubleday & Company, 1961. $4.50).

BOOK REVIEWS

PROCEDURES IN VASCULAR SURGERY, by *Richard Warren*, M.D. (Boston, Little, Brown and Company, 1960. $12.00).

This book is certainly different from any that I have encountered previously. It is really profusely illustrated with pen-and-ink drawings showing the locations of incisions, the position of the patient and the technical steps in performing vascular surgery in all of its aspects. It also covers amputations necessitated by peripheral vascular disease.

Because of the way the book is written, in more-or-less outline form, it can really serve as a quick-reference manual, rather than as a complete treatment of all of the various subjects. Yet, I think it probable that for emergency procedures any surgeon not well acquainted with vascular surgery could find this book useful.—*William H. Myerly*, M.D.

RESUSCITATION OF THE NEWBORN INFANT, ed. by *Harold Abramson*, M.D. (St. Louis, The C. V. Mosby Company, 1960. $10.00).

This is a well-written and long-needed text on this vitally important subject. No fewer than 24 distinguished physicians from the specialties of pediatrics, obstetrics, anesthesiology and medicine have contributed to it.

A concise volume dealing with the entire field of resuscitation of the newborn, this book puts special emphasis upon what we *do* know and on what we *do not* know. It should be included in the library of every doctor who is concerned with the problem of perinatal mortality rates.—*H. Kirby Shiffler*, M.D.

CLINICAL SCALAR ELECTROCARDIOGRAPHY, FOURTH EDITION, by *Bernard S. Lipman*, M.D., and *Edward Massie*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. $8.00).

This is the fourth edition of a popular introduction to electrocardiographic interpretation, previously titled CLINICAL UNIPOLAR ELECTROCARDIOGRAPHY. As in previous editions, the analytic rather than the pattern approach to interpretation is presented, with new data based on orthogonal and other lead systems. More than 150 pages of illustrative electrocardiograms have been collected in a section following the compact text.—*Herman J. Smith*, M.D.

FUNDAMENTALS OF CLINICAL HEMATOLOGY, by *Byrd S. Leavell*, M.D., and *Oscar A. Thorup, Jr.*, M.D. (Philadelphia, W. B. Saunders Company, 1960. $10.00).

From the Department of Internal Medicine at the University of Virginia College of Medicine, the authors have complied a new introductory textbook in the field of hematology, which they describe quite accurately as "comprehensive but not encyclopedic."

The chemistry and function of the various circulating blood elements receive considerable attention in this text. This approach leads smoothly into brief reviews of such clinical problems as porphyrin dis-

turbances and disorders of iron metabolism. Illustrative case reports are offered in many chapters.

There is a good synopsis of current concepts of blood coagulation and of disorders of hemostasis.

The bibliography at the end of each chapter is extensive. Lacking is an index of illustrations, and the color plates, for the most part, have been reproduced from the standard reference volumes.—*Herman J. Smith,* M.D.

CHILDBIRTH WITH HYPNOSIS, by *William S. Kroger,* M.D., ed. by *Jules Steinberg.* (New York, Doubleday & Company, 1961. $3.95).

This book, written for the patient, is in reality a guide to what the expectant mother will experience during her delivery under hypnosis.

Even today, there are many misconceptions in the minds of both the laity and the profession to be overcome when the subject of hypnosis is mentioned. This book succeeds in clarifying these points. It makes no false claims for this method, and presents it in an easily-understandable manner.

Dr. Kroger is a well known pioneer in this field.—*H. Kirby Shiffler,* M.D.

METABOLIC CARE OF THE SURGICAL PATIENT, by *Frances D. Moore,* M.D. (Philadelphia, W. B. Saunders Company, 1959. $20.00).

This book is written by one of the most outstanding surgical physiologists of our times. I have delayed this report so that it could be contrasted with COMPLICATIONS OF SURGERY, edited by Artz and Hardy. Artz and Hardy, in contrast, start with the specific situation and then generalize the entire patient care. These two books actually complement each other, and I am certain that the W. B. Saunders Company must have expected surgeons to think so, for it wouldn't have been good business to publish competing books simultaneously. Personally, I regard Dr. Moore's volume as the more theoretic in approach, and Artz and Hardy's as containing more practical applications. It is a matter of degree, however, and I think that comparing and contrasting the two will prove a valuable exercise in the surgeon's continuing medical education.—*Alfred N. Smith,* M.D.

COMPLICATIONS IN SURGERY AND THEIR MANAGEMENT, ed. by *Curtis P. Artz,* M.D., and *James D. Hardy,* M.D. (Philadelphia, W. B. Saunders Company, 1960. $23.00).

This is an excellent treatise on the care of the surgical patient. It encompasses much more than surgical complications and their management. It deals with their prevention—prevention in the preoperative and operative phases as well as in the postoperative phase of the patient's care. Written in the manner in which "pearls" of information are passed orally from a surgeon to his resident, it provides not only informative but interesting reading. The book is well indexed, and the chapters are adequately sub-titled.

Every surgical resident will be grateful to Drs. Artz and Hardy and their 69 contributors for this treasury of surgical gems. It is a book that all surgeons should read, for it extends to us the lessons gleaned in the large surgical centers on the new procedures developed since our days of intensive surgical training.—*Alfred N. Smith,* M.D.

CHRISTOPHER'S TEXTBOOK OF SURGERY, SEVENTH EDITION, ed. by *Loyal Davis,* M.D. (Philadelphia, W. B. Saunders Company, 1960. $17.00).

This edition of Christopher's textbook upholds the high standards set by previous editions. As the title implies, it retains the textbook approach to the very wide field of surgery. Several excellent texts on the subject are on the market at this time, and this edition of Christopher's holds its position among the best.

The sections on intestinal obstruction and biliary tract disease are of interest to all physicians, and in my opinion are particularly outstanding. However, it is an injustice to select any certain chapters from a book that is so well written throughout.—*Alfred N. Smith,* M.D.

CURRENT THERAPY, 1961, ed. by *Howard F. Conn,* M.D. (Philadelphia, W. B. Saunders Company, 1961. $12.50).

It seems hardly necessary to discuss the format of CURRENT THERAPY, for in the 12 years that Howard Conn has been editing this rather large volume, it has become a medical classic. Each year, the 300 or more authors are changed a little, so that the book is kept new and varied. This year, for example, 253 of the articles have been newly written. The authors are all well-recognized experts in their respective fields, and each writes succinctly about his special interest. Therapeutic advances are kept up-to-date by this means. On the front and back covers, are lists of normal values.

CURRENT THERAPY is indispensible for the practicing physician. He needs it for ready reference, in this age of rapidly changing therapeutics. The articles are all excellently done. Of course, each year, with such a turnover of authorship some articles are better than before, some are of the same quality, and some are not quite as good. There are some additions and some deletions. This year, for example, an article on cardiac arrest has been added. One could wish for an article or two on generic drugs, such as antibiotics and tranquilizers, so that we practicing physicians might better know what drugs to choose. In general, however, criticisms are minimal, and our hats are off again to the editor for his excellent work.—*Daniel A. Glomset,* M.D.

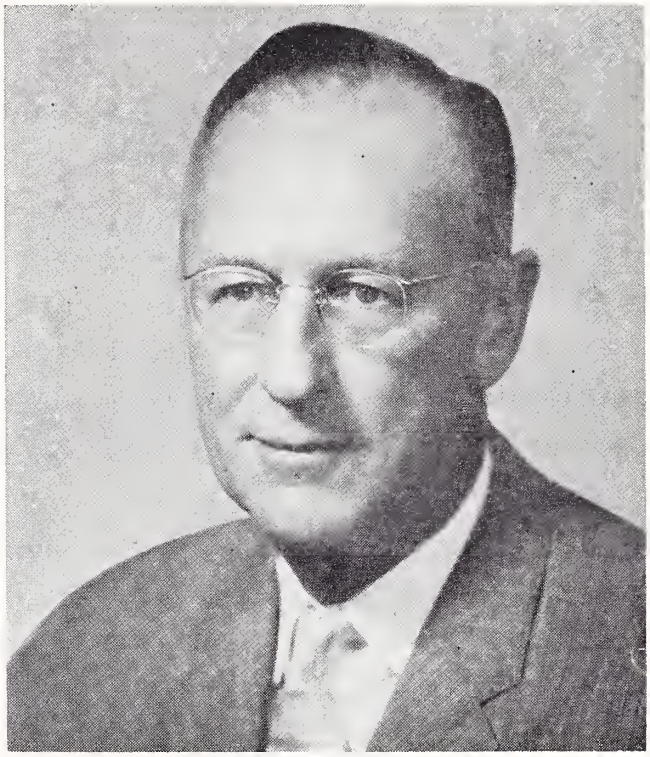
W. B. SAUNDERS COMPANY features the following recent books in its full page advertisement appearing on page vii in this issue:

WHITE—CLINICAL DISTURBANCES OF RENAL FUNCTION
Diagnosis and treatment measures for kidney disorders

RUBIN—THORACIC DISEASES
Covers both medical and surgical management

MAYO CLINIC—DIET MANUAL
Recent advances in food, vitamin and dietary practice

Dr. Robert N. Larimer



Mr. J. W. Fisher

A physician and a layman were honored by the Iowa Medical Society at its annual banquet Tuesday night, April 25, at Hotel Savery. Dr. Robert N. Larimer, of Sioux City, received the Society's Merit Award for his outstanding contributions to organized medicine. Mr. J. W. Fisher, of Marshalltown, received the Society's John F. Sanford Award, which is given to a layman who has made a valuable contribution to organized medicine.

Dr. Larimer served as a Society Trustee from 1949 until 1952, as president in 1954 and then as delegate to the A.M.A. for six years. He was also president of the six-state North Central Medical Conference in 1959.

Mr. Fisher is president and chairman of the board of the Fisher Governor Company, Marshalltown. For several years he has provided scholarships to the State University of Iowa College of Medicine and has also granted many nurses training scholarships. He has made generous contributions to hospitals in his community, and built and furnished the Marshalltown Community Center, which houses many health agencies.

The Sanford award is presented in honor of Dr. John F. Sanford, one of the founders of the State Medical Society.

SURGERY IN PULMONARY TUBERCULOSIS*

The presently available, highly effective antimicrobial agents, used singly or in combinations, are seemingly sufficiently specific to raise the question whether surgery in the treatment of pulmonary tuberculosis will always be necessary in countries with economic levels and medical advancements comparable with those of the United States. However, there are still many untoward factors and circumstances that prevent successful medical management.

Some of these factors and situations are: delay by the patient in seeking medical aid; diagnostic errors and incomplete evaluation, leading to delay in proper treatment; economic factors; uncooperative and recalcitrant patients; drug hypersensitivity; inadequate dosage or duration of drug regimens; initial infection by or development of drug-resistant mycobacteria; associated diseases such as silicosis and malignancy; improper or meddlesome use of potent hormonal agents such as corticotropins and corticosteroids; infection by unusual acid-fast strains or mutants, such as atypical chromogenic mycobacteria; the less commonly occurring relapsing lesions; and, of considerable consequence, the ever-present mulcting or quackery.

SURGERY STILL IMPORTANT

Therefore, regardless of whether the ideal antituberculosis drug is developed in the near future, it seems logical to predict that surgical endeavors will play an important and significant role in a considerable percentage of therapeutic efforts in the management of pulmonary tuberculosis for at least two or three more generations.

Since 1949, resection has steadily increased in popularity, and now most thoracic surgeons and medical chest specialists are inclined to consider extirpative measures as the best surgical means of treating pulmonary tuberculosis. Primary extraperiosteal thoracoplasty, extra periosteal plombage and Monaldi drainage are always kept in mind but seldom employed. By and large, phrenemphraxis, pneumothorax and primary pneumo-

* An abstract of an article by Col. John M. Salyer, M.C., in the August, 1960, issue of THE ROCKY MOUNTAIN MEDICAL JOURNAL.

peritoneum are procedures to be thought of and referred to only in terms of historical deference.

During the past five years the Thoracic Surgery Service at Fitzsimons Army Hospital has performed from 102 to 235 pulmonary and pleural resections each year in the treatment and diagnosis of tuberculosis.

The properly performed segmental resection for localized disease continues to be the procedure of choice and has been at this hospital since 1952. Wedge resection, by and large, should seldom be performed for proved tuberculous lesions; however, wedge removal may be utilized occasionally for small, well-localized peripheral lesions incidental to the primary lobe or segmental resection.

INDICATIONS FOR SURGERY

When surgery is indicated after prolonged chemotherapy (four to eight months), our criteria for resection for the past four years has been essentially as follows: (1) cavitary lesions, unquestionably persistent; (2) cavitary residuals, open or closed, often referred to as "tuberculous abscesses"; (3) large caseonodose residuals, 2 cm. or more in greatest diameter; (4) tuberculous bronchiectasis, severe and localized.

Resection is also called for in cases presenting the following less commonly encountered lesions: (1) so-called "destroyed" lobe or lung (preoperative pulmonary function studies must be done and properly evaluated); (2) chronic relapsing localizing disease; (3) persistently positive sputum; (4) progression of disease under apparently adequate chemotherapy; (5) atelectasis and/or tuberculous pneumonia; (6) bronchopleural fistulae secondary to previous excisional surgery; (7) infarction of adjoining segment or subsegment after pulmonary resection; (8) the so-called salvage case, i.e., a patient with extensive unilateral or bilateral disease with associated limited or poor pulmonary function, often persistently positive with resistant bacilli.

After relatively short periods of chemotherapy, the indications for surgery are: (1) solitary or multiple lesions, where diagnosis cannot be established; (2) pleural effusion; (3) relatively localized disease which is the suspected site of repeated gross bleeding; (4) mixed empyema, resulting after spontaneous pneumothorax associated with destroyed lung.

Excisional surgery in the management of pulmonary tuberculosis is never considered a simple or benign procedure. Five deaths have occurred in our last 500 patients who have had pulmonary and/or pleural resections for proved tuberculous lesions. Three occurred at or shortly after pulmonary resection. The two late deaths resulted from cor pulmonale. Thus, in this recent series of 500 patients, the present mortality is 1 per cent —0.6 per cent being early operative deaths, and 0.4 per cent late deaths.

Bronchopleural fistula, mixed empyema, operative-wound infection and postoperative spread or dissemination are decidedly on the decrease, thanks to better surgical technics, ample blood to cover operative and postoperative losses, antimicrobial agents, and the proper timing of the primary operative procedure after complete evaluation of the patient as a whole and of such important local pathologic states as the degree of healing of bronchoscopically-viewable segmental bronchial orifices.

Presently we are discovering some of the direct causes of persistent postoperative lung-surface leaks, and are aware that postoperative infarctions occur much too frequently and may plague the thoracic surgeon. We are fortunate in that we are learning that proper early and aggressive management can cure and thus avert late and more serious complications, ones which in years past often proved fatal.

By and large, we agree with those who contend that patients who harbor drug-resistant organisms and are candidates for excisional therapy should have lobectomy or pneumonectomy, rather than segmental or wedge resections.

KEFAUVER'S SWEEPING DRUG BILL

Dr. Morris Fishbein's new weekly magazine MEDICAL WORLD NEWS (issue dated May 12, 1961) has given a synopsis of Senator Estes Kefauver's omnibus bill designed to impose strict controls on the pharmaceutical manufacturing industry. It has three principal purposes: (1) to tighten up antitrust laws as they apply to ethical drug companies; (2) to make licensing of patented drugs mandatory; and (3) to give the Food and Drug Administration greater authority to police drug manufacturing and advertising. The proposal has already been introduced in the U. S. Senate, and Representative Emanuel Celler (D., N. Y.) will introduce an identical bill in the House.

The Kefauver Bill would require manufacturers to furnish doctors with full information on the bad as well as the good features of their products, and the Secretary of Health, Education and Welfare would be required to make an annual report to physicians on dangerous drugs. Generic names would be simplified, and the number of patented drugs reduced through the denial of patents to combinations of ingredients, and to minor modifications of previously patented drugs.

The proposal would make it unlawful for large drug companies to agree upon which of their number should obtain a patent, or to agree which should be awarded licenses in the event a patent were issued. It would set a three-year limit on the exclusive rights conferred by drug patents, though it would not disturb the 17-year limit on patents in other fields. At the expiration of three years, the patentee would have to grant a license to "any qualified producer" at a royalty of no more than eight per cent.

There is considerable doubt, MEDICAL NEWS said, that the measure can be voted upon this year.

Iowa Chapter of the American Academy of General Practice

"I WANT A DOCTOR WHO WILL SPECIALIZE IN ME"

Mac F. Cahal, J.D.

Kansas City, Missouri

Medicine is on the threshold of a new frontier. This now-familiar phrase is not capitalized here because I do not refer to the patented Washington model. For my money, it's by no means a foregone conclusion that the profession will be remodeled according to GI specifications. This new frontier can be of Medicine's own making, but we've got to do something about it—something positive and something quick.

REVOLUTIONARY DEMANDS

First, has it ever occurred to you that all the revolutionary demands for changes in our system of medical care are based on the assumption that it costs too much to be sick? This is at the core of all political attacks upon the private practice of medicine—all the legislative attempts to inject "just a little socialism" into our American system. Of course, it is true that physicians' fees are not the heart of Medicine. When a woodsman wants to cut down a tree, he starts with the trunk, not the limbs.

I believe that the total cost of medical care is too high for many people. So is plumbing service. Fortunately for plumbers, a pipe can be left to leak without anybody's really being hurt.

Where lies this new frontier? I believe that to find it, the profession has got to realize once and for all that the present medical distribution system is deficient and that the all-powerful consumer is demanding changes.

Now I don't believe Mr. Consumer wants socialized medicine; he just wants a product that will measure up to his needs and desires. To find it, he's willing to take a look at what his political spokesmen have to offer, and they're showing socialism this year.

Beyond this, I believe that the smoothest trail through the darkening forest of discontent may lie in increasing the number of active practicing physicians—doctors who take care of sick people, not administrators, educators and limited specialists—*to the point that the economic phenomenon of the buyers' market will begin to function.*

REAPPORTIONMENT

The third point of departure for this new frontier, I believe, is a basic and self-imposed reapportionment of medical practice. Researchers have confirmed in their own impersonal, statistical way what thousands of citizens have tried to tell us in their letters: The public is confused.

The scores of specialties, sub-specialties and sub-sub-specialties which, to the layman, move in the nebulous clinical world of specific organ systems and obscure diseases, have left the people wondering whatever happened to the "just plain doctor," the man who cared for him and his family when they were "just plain sick."

Ever since Paul de Kruif wrote a story called "Family Doctor—1955 Model" in READER'S DIGEST, the American Academy of General Practice has received thousands upon thousands of letters from "just plain people" wanting to know how they could find a family doctor. Their plaint in letter after letter: "I want a doctor who will specialize in me."

The man in the medical spectrum who comes closest to what the people seem to want is the general practitioner. He is the doctor whose view of medical practice is to serve as medical counsel to the entire family, to treat the entire body to the extent of his ability (80 per cent of all illnesses), and then refer to a competent specialist those specific conditions beyond his training.

He is the doctor to whom medicine is still an art as well as a science, and whose management of a condition encompasses his patient's emotional involvement as well as his physical discomfiture. He knows that sick people need sympathy as much as pills, understanding as much as bed-rest. He alone offers a total continuing responsibility for the family's health.

The Academy refers continually to comprehen-

Mr. Cahal, an attorney, is executive director of the American Academy of General Practice. This article is reprinted, with permission, from the May, 1961, issue of NEW MEDICAL MATERIA.

sive opinion surveys designed to measure what the American people are saying, thinking and feeling about medical care. An ambitious project of this type now is underway with the Opinion Research Corporation. It already has indicated that the elderly segment of our population—the eye of our present storm—wants the general practitioner. This, the ORC judges to be a phenomenon of the psychology of aging: The person in the upper reaches of the life span appears to want to return to the fundamental medical man.

SOUNDEST APPROACH

At the same time, the family physician's fees are not the ones we hear bandied about as scandalous, shocking. We believe that a physician should be paid what his service is worth—but believe that many people, through the confusion fostered by the system, pay more than they need to for the service they get. It's the same thing as buying a high-powered sports car to go to the grocery store. More reliance on the family physician, we feel, is the soundest approach to bringing down the cost of medical care.

But to rely on him, we must have more of him. We must interest more young men, and women, in becoming doctors—real doctors, who view the justification of their lives and their work simply as the healing of sick people. We must help our medical educators to see the forest in spite of the trees.

The Academy has just launched a wide-ranging information program with which we will carry this reasoning before the people in every city and crossroads of America. We call it Project More. You'll be hearing more about this new program.

Thus, the new frontier lies in a willingness to face facts positively, to increase M.D. numbers both to strengthen our profession and to put ourselves in a more public-oriented economic position, and to build toward a more reasonable professional apportionment in the future.

If these conditions are met, American Medicine will remain free as it moves into its new frontier.

SPRING POSTGRADUATE CONFERENCE

Iowa Chapter

American Academy of General Practice

New Inn, Lake Okoboji

June 22-24, 1961

Make your reservations now with the New Inn for yourself and your family, and plan to attend.

AMA ART EXHIBIT

The Twenty-fourth Annual Exhibition of the American Physicians' Art Association will be held from June 26 to 30 in New York City, in conjunction with the annual meeting of the AMA. The exhibit will include works of sculpture, painting, crafts and photography by physicians throughout the United States.

Further information can be obtained from Alfred A. Richman, M.D., secretary, 307 Second Avenue, New York City 3.

PHYSICAL FITNESS OF AMERICAN YOUTH REALLY ISN'T TOO BAD

After studying the physical fitness of public school children and university students in Philadelphia and comparing the findings with those reported from similar studies in German and Swedish cities, a group of researchers have concluded that the American youngster's inferiority in this particular "may not be as marked as has been generally assumed." The study was made by Kaare Rodahl, M.D. and six associates, and was published in the May issue of ARCHIVES OF ENVIRONMENTAL HEALTH.

"It appears to be a widely accepted view that the American child is inferior to the European child with regard to physical fitness," they said. "The difference has been attributed to the high degree of mechanization in the United States, eliminating much of the physical activity which is still part of normal living and recreation in Europe." However, the authors found "no marked difference" in physical fitness between the Philadelphia youngsters and a similar group in Dortmund, Germany, although those in a number of Swedish cities were generally superior. It appeared reasonable to assume, they said, that the superiority of the Swedish subjects was "due to a greater amount of physical training and activity."

The study also revealed a significant difference among students from different Philadelphia schools. Students in the elementary schools of North Philadelphia in general were superior to those of South Philadelphia elementary schools. Furthermore, they pointed out, there were differences between the physical-fitness levels of students in the various Swedish communities. "In view of the fact that such significant differences in physical work capacity can be demonstrated between one city and another, and indeed between different schools in the same city," they concluded, "caution should be exercised when comparing the state of physical fitness in one country with that of another."

"It would be of value to determine the kind and amount of training required to produce a significant improvement in physical work capacity in the different age groups," the authors said.

Iowa Association of Medical Assistants

NEW OFFICERS

Miss Waneta A. Christensen, the president, is a registered x-ray technician. She graduated from New Hampton High School, attended the American Institute of Business, in Des Moines, and received her technical training from her present employers, Drs. M. M. Wicklund, R. W. Blanchard and O. K. Lanich, Jr., who are collectively known as Radiological Associates. She has worked for them since October, 1946, as technician and medical assistant.

Mrs. Dolores Stevenson, of Fort Dodge, was installed as vice-president. She was born in 1913, she graduated from Fort Dodge High School in 1931, and she attended business college in Fort Dodge for three months. Her business experience includes work in a law office, in the farm loan office of the Metropolitan Life Insurance Company, three years as executive secretary to the superintendent of University Hospitals, Iowa City, and 13 years in her present position with Drs. Matt Sanders and W. E. Gower.

Miss Margaret Hansen, of Davenport, the president-elect, was born and educated there. She graduated from Immaculate Conception Academy and attended the Women's Division of St. Ambrose College for two years. For five years, she was employed by Mercy Hospital, Davenport, as receptionist, bookkeeper and private secretary; for seven years she worked in the office of a finance company in Davenport; and thereafter she was employed on the staff of the Davenport Psychiatric Hospital until 1954, when she started her present position with Dr. W. Hollander, a psychiatrist.

Miss Margaret Burnside, of Des Moines, was reelected recording secretary. She has been a member of the Polk County Medical Assistants for six years, has served as its president, vice-president and program chairman, and is now working on the BULLETIN.

Miss Burnside has been employed as secretary-bookkeeper in the office of Dr. D. C. Wirtz since 1946.

The new treasurer is **Miss Marjorie Ertz,** of Burlington. Miss Ertz attended Burlington Catholic High School and received her R.N. degree from Mercy Hospital School of Nursing, there, in 1955. She was employed at Mercy Hospital until 1957, when she joined the staff of Dr. F. D. Winter, a pathologist.

Miss Helen Hughes, of Iowa City, the immediate past-president, continues on the Executive Committee for another year. She is a native of Iowa City, but moved to Illinois and then to Michigan in her early childhood. She was graduated from Central High School, in Lansing, Michigan, and attended Lansing Business University and Michigan State University. Her business experience includes work as a church secretary, assistant comptroller of a department store, secretary in a dairy, and 14 years as a medical assistant with Dr. Stephen C. Ware, until his departure for Florida last fall. At present, she is employed by Dr. P. A. McLaughlin, in Coralville.

Mrs. Gladys Knight, of Waterloo, was appointed corresponding secretary for IAMA. She has been a medical assistant with Dr. C. W. Seibert for the past two years. She is a graduate of Omaha High School, is married and has a teen-age son.

Mrs. Grace Brock, of Panora, was reappointed historian, a position she has held for several years.

Also elected at this convention were the delegates to the AAMA convention that is to be held in Reno, Nevada, in October. They are Miss Hughes, **Miss Bernice Conway** and Miss Christensen. The alternate delegates are **Mrs. Marjorie Snyder, Miss Gladys Ivens** and **Mrs. Roberta Beardsley.**

IAMA PRESIDENT, 1961-1962

Miss Waneta A. Christensen
Waterloo

STATE DEPARTMENT OF HEALTH

COMMISSIONER

MORBIDITY REPORT FOR MONTH OF APRIL, 1961

Disease	Apr. 1961	Mar. 1961	Apr. 1960	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	299	236	481	Clay, Johnson, Polk, Woodbury
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	1345	654	320	Dubuque, Lee, Scott, Shelby, Warren, Winnebago
Whooping cough	5	9	10	Polk, Pottawattamie
Brucellosis	22	15	53	Clay, Dubuque, Linn, Polk, Scott
Chickenpox	901	928	830	Clay, Dubuque, Polk, Pottawattamie, Scott, Story
Meningococcic meningitis	0	1	0	
Mumps	850	788	655	Des Moines, Dubuque, Polk, Pottawattamie, Scott
Poliomyelitis	1	0	0	Buena Vista
Infectious hepatitis	369	219	56	Boone, Jasper, Polk, Pottawattamie, Woodbury
Rabies in animals	45	23	12	Hardin, Story, Webster
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	36	32	44	For the state
Syphilis	111	89	90	For the state
Gonorrhea	97	86	120	For the state
Histoplasmosis	0	4	0	
Food intoxication	0	0	3	
Meningitis (type unspecified)	1	3	2	Des Moines
Diphtheria carrier	0	0	0	
Aseptic meningitis	2	1	0	Boone, Johnson
Salmonellosis	7	1	1	Polk
Tetanus	1	0	0	Cerro Gordo
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	0	
H. influenzal miningitis	1	0	0	Polk
Amebiasis	1	0	1	Linn
Shigellosis	5	4	2	Polk
Influenza	0	6	220	

INDICATIONS AND PRODUCTS FOR ANTI-RABIES TREATMENT

An editorial published several years ago in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION regarding indications and products for anti-rabies treatment is still applicable.* Regarding the indications for anti-rabies vaccine (Pasteur treatment) for persons who have been exposed to the bite or saliva of a rabid animal, that editorial said:

"Indications for vaccine treatment in cases of animal bites were considered by the first session of the WHO Expert Committee on Rabies, held in April, 1950. The Committee published detailed indications (see accompanying table) for the use of vaccine that are designed to avoid, as much as possible, indiscriminate use of the Pasteur treatment. Use of the Pasteur treatment was favored only in cases of bites and licks of uncaptured, wild or rabid animals, and in cases of multiple bites of the head, neck and shoulders. Similar conservatism has been advocated by Sellers, who considers anti-rabies treatment contraindicated in the following circumstances: (1) When there is no broken skin anywhere on the body, including the face or mouth; (2) If previous wounds are known to be 24 hours old or are covered with an unbroken scab; (3) If the tooth wounds were made through untorn clothing (such wounds are usually bruises); (4) If exposure is limited to handling only the dog or objects contaminated with the saliva, or to drinking the milk of rabid cows or goats; (5) If the wounds were inflicted not less than seven days prior to detection of visible signs of the disease; and (6) If the animal remains normal for as long as seven days after inflicting the wounds. Reimmunization should be avoided for borderline exposure regardless of the time elapsed since the last treatment, according to Sellers. He recommends that retreatment be limited, in any case, to a short booster series of five or six injections."

In Iowa since January 1, 1940, two persons have died of rabies, and during the same period three persons have died of unwarranted nervous-tissue anti-rabies treatments. Unfavorable reactions are more likely to occur if the patient has received Pasteur treatments previously.

* Editorial, J.A.M.A., **149**:1318-1319, (Aug. 2) 1952.

PRODUCTS AVAILABLE

1. *Nervous tissue (brain) vaccine.* This is the vaccine that has been used for many years for post-exposure anti-rabies treatment (Pasteur treatment).

2. *Duck embryo vaccine.* Duck embryo rabies vaccine became available in 1952. The routine prophylactic treatment consists of 14 doses. The WHO Expert Committee on Rabies (4th Report) states: "Duck embryo vaccines have shown no deleterious effect in man except for local reactions, including adenopathy." It is recommended, in lieu of brain-tissue vaccine, especially for persons who have received nervous-tissue previously. It should be used with caution in persons sensitive to egg protein and other allergies. Most reactions are controllable by adrenalin or antihistamines.

3. *Anti-rabies hyperimmune serum.* Anti-rabies serum is a relatively new product. It does not replace anti-rabies vaccine, but serves as an adjunct in certain situations. The primary function of antiserum is to establish protective titers of antibody immediately after exposure, and thus bridge the gap between exposure and the time when vaccine induces effective antibody responses. It is intended to provide immediate passive protection. It is short-lasting, since it does not stimulate antibody production in the exposed person. Antiserum is indicated especially when the incubation period is likely to be short, as may be the case when multiple bites have been sustained about the head, face or neck. The dosage varies with the patient's weight and the time that has elapsed before administration. The use of antiserum does not alter the indications for the use of vaccine.

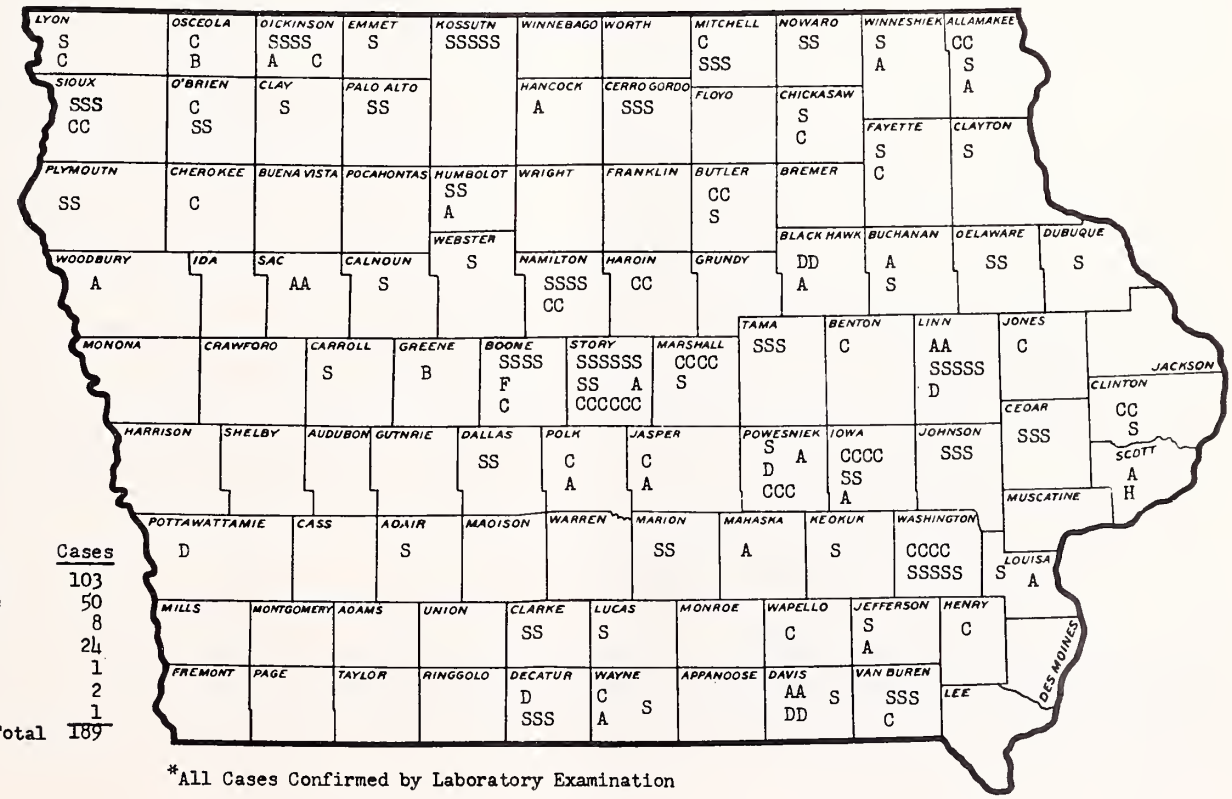
Since anti-rabies serum is of equine origin, it is necessary to test for immediate sensitivity in the patient before the serum is administered.

POST-EXPOSURE TREATMENT WITH SERUM AND VACCINE

As the Fourth Report of the WHO Expert Committee on Rabies says: ". . . this (combined serum and vaccine) treatment is definitely the best method now available." It is especially indicated in severe exposures (head and neck bites). Protection against rabies depends upon active immunization, achieved by the production of antibodies under the stimulus of the vaccine. But even if the first of the large number of injections needed is carried out immediately after the bite, several days elapse before antibodies are detectable in the serum. During this period, the virus inoculated with the bite of the animal may multiply, particularly if it is inoculated in large quantity, outstripping the defensive measures and thus causing them to fail. With a view to obviating this danger and creating an immediate barrier to the

RABIES IN ANIMALS IN IOWA IN 1960

County Distribution by Species of Reported Cases*



Legend	Cases
S-Skunk	103
C-Cattle	50
D-Dog	8
A-Cat	24
H-Hog	1
B-Bat	2
F-Fox	1
Total	189

*All Cases Confirmed by Laboratory Examination

virus, a method of treatment with serum was tested for some years and then adopted, and it now forms a part of standard immunization methods. Serum with a high antibody content (hyperimmune serum) is used; it is prepared usually from horses, donkeys or mules, and is injected along with the first dose of vaccine. By temporarily slowing down or halting the multiplication of the virus, it gives time for active immunity to develop. The dose should not be less than 40 International Units (1 IU = 1 mg.) per Kg. of body weight, followed by a course of not less than 14 daily doses of vaccine when the full treatment is given. *Two supplemental doses of vaccine—preferably with a vaccine of other than nervous tissue—should be administered 10 to 20 days after completion of the course of vaccinations. This is an innovation and was introduced because experimental work indicated that serum partially inhibits the production of active immunity by the vaccine; the two supplemental doses of vaccine exert a booster effect.**

The current revision of the WHO Guide reproduced herewith is the first to list bats specifically. During 1960, Iowa became the twenty-ninth state to report rabies in bats. The disease has now been reported in 23 species of bats in 32 states.

* Source: WHO CHRONICLE, 14:455, (Dec.) 1960.

GUIDE FOR SPECIFIC POST-EXPOSURE TREATMENT[1]

NATURE OF EXPOSURE	STATUS OF BITING ANIMAL: At Time of Exposure	STATUS OF BITING ANIMAL: During Observation Period	RECOMMENDED TREATMENT[2] (In Addition to Local Treatment)
I. No lesions; indirect contact only	rabid	.....	none[2]
II. Licks:			
(1) unabraded skin	rabid	.....	none[2]
(2) abraded skin scratches & abraded or unabraded mucosa	(a) healthy	clinical signs of rabies or proven rabid	start vaccine at first signs of rabies in animals[2]
	(b) signs suggestive of rabies	healthy	start vaccine immediately; stop treatment if animal is normal on 5th day after exposure[2]
	(c) rabid, escaped, killed or unknown	.....	start vaccine immediately[2]
III. Bites:			
(1) Mild exposure	(a) healthy	clinical signs of rabies or proven rabid	start vaccine at first signs of rabies in animal[2]
	(b) signs suggestive of rabies	healthy	start vaccine immediately; stop treatment if animal is normal on 5th day after exposure[2]
	(c) rabid, escaped, killed or unknown	.....	start vaccine immediately[2]
	(d) jackal, fox, bat, wolf, or other wild animals	.....	serum immediately, followed by a course of vaccine
(2) severe exposure (multiple or face, head, finger, or neck bites)	(a) healthy	clinical signs of rabies or proven rabid	serum immediately; start vaccine at first sign of rabies[3]
	(b) signs suggestive of rabies	healthy	serum immediately; followed by vaccine; vaccine may be stopped if animal is normal on 5th day after exposure
	(c) rabid, escaped, killed, or unknown, any bite by wild animal	.....	serum immediately, followed by vaccine[3]

[1] WHO Expert Committee on Rabies, Fourth Report. Tech. Report. Series No. 201, 1960.
[2] See explanatory notes contained in the commentary on the next page.
[3] Course of vaccine to be followed by supplemental doses of vaccine of non-nervous tissue if possible, 10 and 20 days after the last usual dose.

COMMENTARY ON THE PRECEDING "GUIDE"

The preceding schedule applies equally, whether or not the biting animal has previously been vaccinated.

A detailed history of exact circumstances of exposure is essential in determining the action to be taken.

The general principles on which the foregoing guide is based are that in mild exposures a course of vaccine following local treatment is sufficient, whereas following severe exposures, and in all cases of unprovoked wild-animal bites, anti-rabies serum together with vaccine should be employed. As with vaccine alone, it is important to start combined serum and vaccine treatment as promptly as possible after exposure. Serum should be administered in a single dose (not less than 40 International Units per Kg. of body weight) at the start of treatment, followed by a course of not less than 14 daily doses of vaccine. In all cases where serum is followed by a full course of vaccine, it is suggested that two supplemental doses of vaccine be administered at 10 and 20 days following the completion of the usual vaccine schedule. Where possible, these supplemental doses should be with a vaccine of non-nervous tissue origin.

Sensitivity to serum should be tested before serum is used.

It is fully recognized that this table is only a guide, and in certain situations specific conditions may warrant modifications, e.g., exposure, especially in young children, where a reliable history cannot be obtained, and particularly in areas where rabies is known to be enzootic even though the animal at the time of exposure is considered healthy. Such cases may justify treatment immediately in a modified way. A possible modification would be that following local treatment of the wound, one could give a single dose of serum or three doses of vaccine at daily intervals, and then give no further vaccine if the animal stayed healthy for 10 days.

Another example of a local situation in which a modified interpretation of these recommendations may be indicated is that of rabies-free areas where frequent exposures to animal bites are encountered. In such localities, adequate laboratory and field experience indicating no infection in the species of animal may justify the local health authorities in recommending no specific anti-rabies treatment.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

THIRTEENTH ANNUAL HEALTH EDUCATION WORKSHOP

On June 20-21, community leaders from throughout Iowa will meet at the Memorial Union of Iowa State University, in Ames, for the Thirteenth Annual Health Education Workshop. The meeting is arranged by the Health Education Division of the Iowa State Department of Health, and one of the 35 co-sponsoring agencies is the Iowa Medical Society. The theme of this year's sessions will be "The Art of Communications in Developing Health Projects."

The speakers and discussion leaders will include Mr. Leo Brown, of Chicago, director of the AMA Bureau of Communications; Mr. Doyle Taylor, city editor of the DES MOINES REGISTER AND TRIBUNE; Mr. Doug Sherwin, of radio station KGLO, Mason City; Mr. Warren Meade, of television station KWWL, Waterloo; Mr. John Huseby and Mr. Robert Kern, of Iowa State University; and Miss Mary Frances Devine, personnel supervisor, Northwestern Bell Telephone Company.

CLUE TO MECHANISM OF BACTERIAL INFECTIONS

A clue to the complex process by which bacteria cause infection, as well as to the severity of the infection produced, was reported on April 25 at the Chicago meeting of the Society of American Bacteriologists, by Dr. C. W. DeWitt and Mr. Paris M. Allen, of the Upjohn Company's research laboratories. They told their fellow bacteriologists that two factors appear to be involved: (1) stress in the host, and (2) a specific kind of "coat" on the infecting bacteria.

The studies had been performed with 30 strains of only one group of bacteria, the Escherichia coli that are common inhabitants of the intestinal tract but which may cause diseases such as urinary tract infections, peritonitis or infantile diarrhea. The investigators said that the "coat" to which they referred is made up of proteins, fats and other substances technically named K antigen.

When laboratory mice were subjected to stress and simultaneously injected with E. coli having K antigen capsules, a single cell was sufficient in some cases to cause infection and even death. Conversely, when the infecting agent was introduced into unstressed animals, the lethal dose ranged from 30,000 to 5,000,000 organisms per mouse. In previous studies, such large numbers of E. coli—even those with K antigen coats—has been required to produce death in test animals that the organisms had been termed "toxic," rather than "virulent."

REVIEW OF BLOOD TRANSFUSION PRACTICES NEEDED

In surveying hospitals, it has become apparent to the Joint Commission on Accreditation of Hospitals that there is need, on the local hospital level, for an educational program to review blood transfusion practices. This should concern not only those physicians interested in blood banking, but all those who prescribe the use of blood and blood products in transfusion therapy.

There are two organizations which inspect and accredit or license blood banks, the American Association of Blood Banks and the National Institutes of Health of the USPHS. Those programs are primarily concerned with those aspects of blood banking which include the procurement and processing of blood for use in therapy. These programs are vital for the safety of transfusions and should be supported, but strict attention should also be given to the proper handling and use of blood in patient care. It is particularly this aspect of blood transfusion practice which the Commission believes should be studied and evaluated by the local hospital staff, and for which a mechanism should be established to insure continued supervision and review.

The mechanism by which this is accomplished should be determined by the local hospital staff. It knows best how it can be done effectively as a part of the over-all review of clinical practice.

The Joint Blood Council, Inc., the members of which are the AMA, the American Hospital Association, the American National Red Cross, the American Society of Clinical Pathologists and the American Association of Blood Banks, has contributed a great deal to the improvement of blood banks and blood transfusions services in hospitals. Although the Commission does not require their adoption, the Council has made the following recommendations, and the Commission endorses them:

1. That each hospital institute a review of all transfusions of blood and blood derivatives by one of the existing committees of the medical staff, or by a separate transfusion committee.

2. That it be the responsibility of this committee to make recommendations to the medical staff concerning the proper use of blood and blood derivatives in that hospital. The formulation of these policies should be consistent with good medical practice. The committee should be guided by the Standards of the Joint Blood Council and the American Association of Blood Banks and other authorities. The hospital pathologist should be a member of this review committee, and the committee should have representation from all clinical services.

3. That there be adequate procedures for identification and compatibility testing of blood in the hospital under the immediate supervision of a physician, and these procedures shall be made a matter of record with the transfusion committee of the medical staff.

4. That this committee review all transfusion reaction occurring in the hospital, making a complete investigation concerning possible causes of these reactions, and based on these investigations make recommendations to the medical staff, if necessary, for improvement of blood transfusion practice.

LIVE POLIO VACCINE EFFECTIVE IN FIRST COMMUNITY USE

The first use of the Sabin oral live poliovirus vaccine in a community-wide immunization program in this country has been termed "highly effective." A report on the project was made by a group, headed by Dr. Albert B. Sabin, of Cincinnati, the developer, in the May issue of the AMERICAN JOURNAL OF DISEASES OF CHILDREN.

A total of 181,784 persons in Cincinnati and adjacent Hamilton County, Ohio, were vaccinated during the program that began in late April, 1960. "With the exception of a single imported case in September, there were no cases of poliomyelitis either in the city or the surrounding county with a total population of about 940,000, thus achieving the objective of the vaccination program," the report said.

The vaccine was administered in a teaspoonful of syrup. Each person received three doses, one for each of the three types of polioviruses. The report claimed that there were no untoward reactions to the vaccine. Most preschool children, some of the adults, and a small number of school-age youngsters received all three doses by the end of June. Most of the school-age children received their final two doses in November, 1960, and January, 1961. The first dose contained attenuated Type I poliovirus, the type that causes 85 to 90 per cent of paralytic polio.

School children were given the oral vaccine during a brief recess at school, and the preschool children were given it through the cooperation of 265 physicians whose offices were used as centers for the program.

The report suggested a two-phase program for eliminating polio throughout the nation as soon as the live vaccine becomes available in sufficient quantity. The first phase would be community-wide prophylaxis during the winter and spring of the largest possible number of persons, regardless of prior Salk shots, with special emphasis on preschool children, the most important spreaders of polioviruses. The second phase called for administration of the material to all newborns (during the first year of life) as part of their regular medical care.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

As a new Auxiliary year begins, so does a column from your new president. It is my desire that throughout the coming year you will find my suggestions and comments helpful to you.

Doctors' wives in Iowa are presented the opportunity of making this year most successful simply by fulfilling the obligation that each of them acquired with her marriage. Just as the doctor must assume responsibility in the community by virtue of his profession, so the members of his family find that prominence in community life is thrust upon them.

An excerpt from George Washington's "Rules of Conduct": "When a man does all he can, though it succeed not well, blame not him that did it."

Each town, city and county has its individual health needs. Each doctor's wife has the responsibility of leadership in accomplishing health programs. Know and exchange ideas with your community leaders. Our way of life is in their hands.

I am proud to introduce our new editor of WOMAN'S AUXILIARY NEWS, Mrs. Herbert Shulman, of Waterloo. We want our publication to provide a lively exchange of ideas among the counties. We are eager for it to provide you information from our officers and from the chairmen of standing committees regarding Auxiliary policies, programs and problems. If you have an original idea or a sincere thought which may be of value to the whole organization, your editor will be happy to include it if possible.

The AMA Auxiliary Convention will be held at the Roosevelt Hotel, in New York City, June 26-29. Mrs. R. F. Nielsen, Mrs. E. B. Dawson and Mrs. S. P. Leinbach are the elected delegates to it, in addition to your president.

Your new officers have been given lighted candles by their predecessors, to keep burning brightly in their work for the Auxiliary. When they call upon you, give them of your best, so that we may reach new heights in the "Challenge of 1961."

Our State Auxiliary is only as successful as the individual county Auxiliaries make it, since the state organization serves only to coordinate local activity. With every large and small county, and every member-at-large doing her part, the Woman's Auxiliary to the Iowa Medical Society will be assured of progress and success.

—MRS. BENJAMIN F. KILGORE
President

INAUGURAL ADDRESS

Mrs. Benjamin F. Kilgore

I consider it an honor and a privilege to stand before you as your new president of the Woman's Auxiliary to the Iowa Medical Society. I treasure the trust and recognition that you have accorded me, and will always strive to deserve it. To follow in the footsteps of the many capable presidents who have served before me is indeed a challenge.

Our responsibility in the Auxiliary is cast with our parent body, the American Medical Association. Leadership in many lines falls upon the shoulders of the doctor's wife the day she marries. Our varied and interesting program permits each member to make her best contribution to her husband's welfare, to his profession and to the community. That contribution, if it is to be worthwhile, entails dynamic aggressiveness, and above all hard work.

Our days ahead will be filled with both opportunity and responsibility. The national attitude toward our physician husbands—and toward medical care generally—is the sum total of the public attitudes in each of our communities. The opinions and attitudes of your neighbors in your home towns provide the basis for the Gallup rating of the medical profession as a whole. What that rating is depends largely upon you, for it is you who can help immeasurably in molding the right opinions and attitudes.

It has been the dream of the State Auxiliary to match the State Medical Society in membership, but for some reason it has fallen far short of achieving that objective. The disparity in membership between the Auxiliary and the Medical Society disturbs us. We should like to think that all wives of physicians are eager and willing to affiliate with the only organization open to them in which the sole interest is the advancement of the aims of the medical profession.

Our most crucial challenge is the proposed federal control of medical care for the aged. If For-and-type legislation is passed, we can anticipate a full-scale program of regimented, socialized medicine within a very few years. The free enterprise medical system which has constantly been improved by physicians and allied groups, provides America with the most advanced medical care in the world. The Auxiliary must stand steadfastly at the side of the medical profession to

defeat any proposal that might lower the quality of that care, or might handicap physicians.

The doctor and the doctor's wife must work shoulder-to-shoulder with other citizens in meeting the challenge posed by the increase in the numbers of elderly citizens. The Legislative Committee of the Auxiliary has been a potent force in alerting all of us to our responsibilities in this cause.

Today there are 15,000,000 Americans over 65, and it is estimated that by 1975 one out of every 10 citizens will be over 65. Neither the health professions nor the lay public can meet the needs of our aging population through negative thinking or negative action. Our husbands realize this. Thus, across the nation they have been taking positive action. With the endorsement of the AMA, most of the state medical societies have formed committees on the problems of the aging. It is time now for the members of the Auxiliary to become effective partners in the medical team that is tackling this gigantic problem.

You ask, "How can I help?" Look up the chairman of the committee on aging in your area, and offer your services. Let's do everything in our power to help the elderly to feel important and needed. Let's find jobs for them, if they are able and wish to continue working. Let's reintegrate our older citizens into the fabric of everyday life. You see, the Woman's Auxiliary will have a big job to do in this field alone for years to come.

The American Medical Education Foundation continues to be one of our top projects. This past year, our State Auxiliary contributed the outstanding sum of $1,928.97 to this Foundation. The money, as many of you know, came through the projects and programs planned by the county Auxiliaries. Polk County alone contributed $1,556.30.

We can be justly proud of the accomplishments of both the Health Careers Recruitment and the Health Educational Loan Fund Committees. We are sponsoring 47 Future Nurses' Clubs in high schools. Our loan fund is in constant demand. Forty-two young women have been given financial assistance toward their nursing education since the inception of this program.

Rural Health is the new committee developed on the national level this past year. We have set up a Rural Health Committee on the state level, and we urge each county Auxiliary to provide such a chairman. The Auxiliary will be working closely with the AMA Council on Rural Health on plans for the regional rural health conference that is to be held in Des Moines in May, 1962.

Participate in the safety program. Encourage the safety driving education program in high schools. Safety is not a matter of "every man for himself." It means looking out for the other person and preventing accidents to others, from whatever cause.

With the beginning of a new organizational year, we can look forward with hope that the creative thinking of our hard-working members will extend our program to encompass new ways of helping our medical societies. We have been expanding our objectives and our program each year. Therefore, we need the helping hands of new members. We appreciate the fine work of the organized county Auxiliaries; we value the participation of the members-at-large and their interest in Auxiliary progress. We need the sanction and encouragement of still more county medical societies for the formation of new county Auxiliaries; and in the counties that are already organized, we need the supervision and encouragement of the medical societies so that we can have the feeling of being needed on the local level. We should like to be true teammates of the men of medicine.

The theme chosen this year by our national president, Mrs. Mackersie, is: "Preserve and Enhance the Heritage of American Medicine." Ours is a priceless heritage. We must not let it be wrenched from our grip as a result of the spread of false ideologies, foreign to our concept of democracy. We must pass our heritage on to those who are to follow after us, with added luster and attractiveness. Sir William Osler said, "We are not here to take from life, but to give to life."

Our Auxiliary is a living chain
And firmly clasped, the links are women's hands.
They reach to cities, villages and farms
To every race and creed—to distant lands.

ART EXHIBIT IS HUGE SUCCESS

Hundreds of doctors and their wives and guests, along with the other exhibitors at the Iowa Medical Society's Annual Meeting, April 23-26, visited the art exhibit at the Veterans Auditorium in Des Moines. We are pleased to report that the show included 39 pictures in oils, water colors and graphic art, and seven sculptures. The display was most interesting and entertaining, and the viewers were unanimous in saying that it was a real addition to the Annual Meeting.

The prize-winners were as follows:

Class I:	Mrs. John Saar, Keokuk
	Dr. L. V. Larsen, Harlan
	Mrs. R. F. Nielsen, Cedar Falls
Class II:	Mrs. Jessie Loomis, Waterloo
	Dr. Charles Burr, Des Moines
	Mrs. Wm. Telfer, Waterloo
Class III:	Mrs. Robert Hickey, Iowa City
	Dr. T. E. Corcoran, Des Moines
	Mrs. Carol Hake, Knoxville
Class IV:	Dr. R. A. Young, Clarion
	Mrs. Charlotte Wicklund, Waterloo
	Dr. J. P. Cogley, Council Bluffs

—MRS. N. W. IRVING
Chairman

ANNUAL MEETING

The Thirty-second Annual Meeting of the Woman's Auxiliary to the Iowa Medical Society was held in Des Moines, at Hotel Savery, April 24-25, 1961.

A pre-convention meeting of the Auxiliary board was held on Sunday afternoon, April 23. Mrs. R. F. Nielsen, Auxiliary president, presided. Annual reports of the officers and committee chairmen were heard, and future plans for Auxiliary activities were discussed. Following the board meeting, a buffet supper was enjoyed by the board members, convention committee chairmen and their husbands.

Registration for the meeting opened at 8:00 a.m. on Monday, and continued throughout the day. Coffee and rolls were served in the Hospitality Room from 8:30 to 9:30, and many of our members and guests enjoyed a pleasant hour there before starting the business of the day.

Mrs. Nielsen called the Conference of Delegates to order at 9:30. Following the Auxiliary pledge, Mrs. F. C. Coleman, president of the Polk County Auxiliary, welcomed the members and guests to the meeting and to Des Moines. Mrs. B. F. Kilgore, the state president-elect, responded on behalf of the Auxiliary. The agenda consisted of a report of the finance chairman, Mrs. E. A. Vorisek, and the presentation of the 1961-1962 budget. The auditor's report was read by Mrs. John Matheson. Also considered at that session were amendments to the constitution and bylaws. The nominating committee for 1962 was elected, and the report of the 1961 nominating committee was given by Mrs. G. A. Paschal. Mrs. J. L. Kestel conducted a memorial service for doctors' wives who had passed away during the year.

The Iowa Auxiliary was proud to have Mrs. Harlan English, president-elect of the National Auxiliary, as its guest during the meeting. The subject of her formal address to the Conference of Delegates on Monday morning was "Your Auxiliary Is Important!" Her charm and graciousness, her words of wisdom and her spirit of helpfulness won many friends for her during her visit to Iowa.

Mrs. English and the past presidents of the Iowa Auxiliary were guests of honor at a buffet luncheon Monday noon. Mrs. Norman Erbe, wife of the governor of Iowa, was also a guest of honor, as was Auxiliary member Mrs. F. H. Richardson, of Council Bluffs, who was "Mrs. Iowa" of 1960.

Mr. Glenn Lull, a Des Moines interior decorator, was the featured speaker of the afternoon, and his topic was "Personality in the Home." He discussed the use of color in the home, and displayed some interesting and beautiful fabrics for draperies and upholstery.

Registration began at 8:00 Tuesday morning and continued until noon. Coffee and rolls were again served in the Hospitality Room, and that place was a popular one during the early morning hour. Mrs. F. M. Kiesau was the charming hostess both mornings. Mrs. Nielsen called the Conference of Delegates to order at 9:30, and the first order of business was the report of the nominating committee by its chairman, Mrs. G. A. Paschal. Election instructions were given by Mrs. D. C. Wirtz, the parliamentarian, and new officers were elected. Mrs. E. A. Larsen, a past president, installed the new officers. Also during this business session, delegates to the National Auxiliary convention were chosen. "Auxiliary Angles" was the subject of the address delivered to the Conference of Delegates by Dr. O. N. Glesne, president-elect of the Iowa Medical Society.

A luncheon Tuesday noon in the Terrace Room of Hotel Savery honored the retiring president, Mrs. Nielsen. Mrs. C. H. Flynn, a past president, presided at the luncheon and introduced the guests of the Auxiliary. Dr. E. F. Van Epps, president of the Iowa Medical Society, presented awards to the three essay-contest winners at the state level. Charlotte Martin, of West Union, received the first prize of $100; the second prize went to Carol Swensen, of Claremont, $50; and Jan Thatcher, of Boone, received the third prize of $25. The subject of each of the winning essays was "The Advantages of Private Medical Care." The judges of the contest at the state level were Mr. F. K. Stratton, head of the English Department at East High School, Des Moines; Mr. E. M. Kingery, executive secretary of the Polk County Medical Society; and Dennis H. Kelly, Sr., M.D., scientific editor of the JOURNAL OF THE IOWA MEDICAL SOCIETY.

Mrs. E. B. Dawson presented the Community Health Service Award to Mrs. Cliff Millen, of Des Moines. The award is given to a lay person who has done outstanding volunteer work in the community health field.

Following the presentation of these awards, Mrs. Kilgore, the newly-installed president, gave her inaugural address. Mr. Paul Engle, author, lecturer, poet and professor of English at the State University of Iowa, talked about "Women in American History" in an amusing fashion, and his wit and humor thoroughly entertained the audience.

Mrs. Kilgore presided at the post-convention board meeting Tuesday afternoon. She submitted the names of new chairmen of committees, and other matters of business were considered. Plans for a later board meeting were made.

A benefit dance for the Woman's Auxiliary Health Education Loan Fund was held in the Grand Ballroom on Tuesday night, following the banquet of the Medical Society. Evan Morgan's orchestra provided the music, and a social hour was sponsored by the Standard Medical and Surgical Company. For the past six years, this dance has

provided a pleasant, sociable evening during the annual meeting, and the proceeds have enabled the Auxiliary to help deserving girls obtain careers in nursing or allied professions.

COMMUNITY HEALTH SERVICE AWARD RECIPIENT

Mrs. Cliff Millen
Des Moines

At the turn of each new year, the Community Service chairman of the State Auxiliary sends letters to the presidents of county Auxiliaries and county community service chairmen, asking them to recommend candidates for the Woman-of-the-Year Health Service Award. This award may not be given to any one who earns her living in medicine or any of its allied fields, but must be given to a volunteer worker.

This year there were a number of wonderful nominees. The State Medical Society's Woman's Auxiliary Advisory Committee selected one of them as the state Woman-of-the-Year.

The recipient, Mrs. Cliff Millen, is a member of the Board of Directors of the Des Moines United Community Service, chairman of the Des Moines Council of Social Agencies, and a member of the Advisory Committee of the City-County Health Department. She has been active in the glaucoma screening project and in the fluoridation program. She presided at the clinic when the Iowa Chapter of the Arthritis and Rheumatism Foundation was established in 1958, she is a past-president of the Board of Public Health Nursing, a former president of the Des Moines Health Center, and a former president of the Women's Civic Council. She has served on the Executive Committee of the Department of Adult Education of the Des Moines Public Schools, and on the governing body of the tri-state area of the National Conference of Christians and Jews. She has been a board member of the League of Women Voters, and is an active member of the Des Moines Mercy Hospital Guild.

—MRS. EMERSON B. DAWSON
Community Service Chairman

Things About the Convention That Deserve Remembering

by Past-president Lillian Nielsen

- Auxiliary members generously gave Paul Engle the centerpieces which he admired and which had been made in his honor.
- Dean Nelson, of the S.U.I. Medical School, insisted he would never know whether, unaided, he would have been a good boy or a bad one. His father never gave him a *choice*. He HAD to be good!
- The princess who dramatically and opportunely appeared.
- The gracious reception by the House of Delegates to the "state of the (Auxiliary) union" message.
- The sister act of our Legislative twins, Jane and Janet.
- The debut of "Operation Coffee Cup."
- Mathilde Vorisek's Finance Wheel exhibit, with an Auxiliary gal at the wheel getting good mileage.
- The governor's wife, Mrs. Erbe (we may call her "Jackie" now), attended our luncheons. Governor and Mrs. Erbe were at the Loan Fund Dance.
- The art exhibit at the Auditorium, capably handled by Florence Irving.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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(chloramphenicol, Parke-Dav

That the sensitivity patterns of "street" staphylococci differ widely from those "hospital" staphylococci is a well-established clinical fact.[1-5] Although strains staphylococci encountered in general practice have remained relatively sensitive a number of antibiotics,[6] the problem of antibiotic-resistant staphylococci appea to be a threat to all patients in hospitals today. It is encouraging to note, howeve "...that a relatively small percentage of strains develop resistance to chlorar phenicol, despite the consumption of large amounts of this antibiotic."[7]

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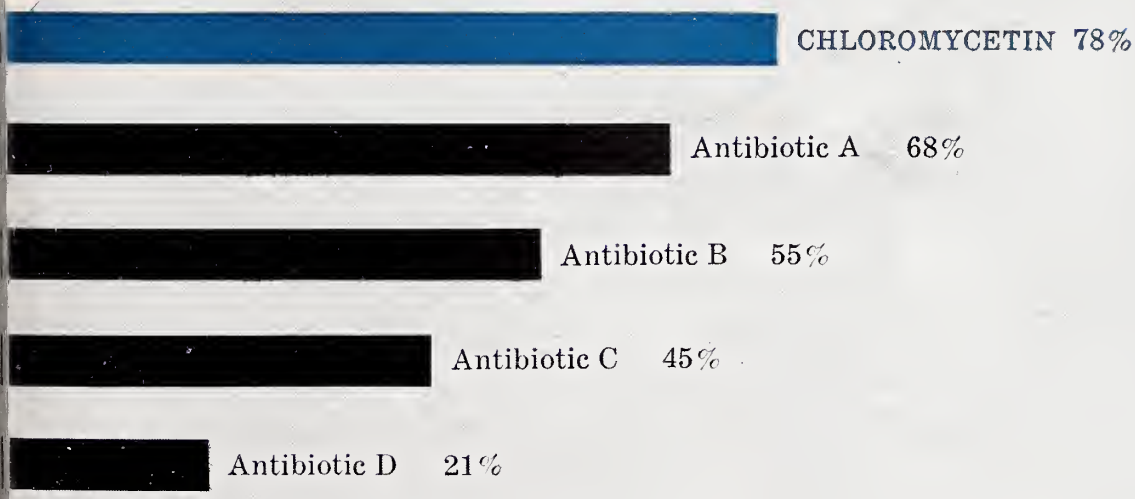

ese strains of coagulase-positive staphylococci were isolated from hospitalized patients at a ge county hospital during the year 1959. Sensitivity tests were done by the disc method.

apted from Bauer, Perry, & Kirby[1]

ferences: (1) Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* **173**:475, 1960. (2) Fisher, M. W.: ch. *Int. Med.* **105**:413, 1960. (3) Cohen, S.: *Circulation* **20**:96, 1959. (4) Edwards, T. S.: *Am. J. Ophth.* Part II:19, 1959. (5) Smith, I. M.: Staphylococcal Infections, Chicago, The Year Book Publishers, Inc., 8, p. 148. (6) Petersdorf, R. G.; Rose, M. C.; Minchew, H. B.; Keene, W. R., & Bennett, I. L., Jr.: ch. *Int. Med.* **105**:398, 1960. (7) Editorial: *J.A.M.A.* **173**:544, 1960. (8) Finland, M.; Jones, W. F., Jr., & nnett, I. L., Jr.: *Arch. Int. Med.* **104**:365, 1959.

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The President's Address

A Four Point Program for Iowa Physicians

EUGENE F. VAN EPPS, M.D.
IOWA CITY

I SHOULD LIKE TO present a four-point program to the physicians of Iowa for their consideration and action. It includes: 1. Medical student recruitment; 2. Medical student scholarships; 3. Physician distribution; 4. Home care for patients.

MEDICAL STUDENT RECRUITMENT

Iowa physicians individually—and collectively as the Iowa State Medical Society—have become increasingly aware of their responsibility to provide replacements for themselves, and to increase, if possible, the numbers of new medical graduates in order to meet the needs of our expanding population. I shall use as few statistics as I can to make a few points clear and to indicate trends. They have been taken from the Bayne-Jones Reports, from Twenty Medical School Reports, from the Datagrams of the American Association of Medical Colleges, and from records in the dean's office at the S.U.I. College of Medicine. These reports have been summarized by Dr. Robert C. Hardin, the associate dean at S.U.I.

There has been little change in the M.D.-population ratio since 1940, and at the present rate of production, there will be only a slight drop by 1975 (Table 1).

TABLE 1

THE SUPPLY OF PHYSICIANS—PAST, PRESENT AND EXPECTED

Year	Number of M.D.'s in the U.S.	Number of M.D.'s Per 100,000 People
1930	154,000	125.5
1940	175,200	132.6
1950	203,500	134.2
1957	226,600	132.4
1958	230,600	132.5
1959	235,000	132.7
1965	259,000	132.8
1975	296,000	125.9

These figures must be viewed cautiously, however, since they include considerable numbers of physicians whose services aren't generally available to the public. Table 2 presents a comparison between the absolute physician-population ratios and the ratios of physicians in practice to population.

TABLE 2

RATIOS OF TOTAL M.D.'S TO POPULATION, AND OF PRACTICING M.D.'S TO POPULATION

Year	Absolute Ratio	M.D.'s in Practice Per 100,000 People
1940	132.6	108.2
1949	134.9	100.8
1957	132.4	91.0
1958	132.5	90.9

These figures would indicate to me a shift of physicians not only to other fields (government, research, public health and hospital service), but also to increasing specialization amongst those in practice. The *absolute* ratio has been maintained through the importation of foreign-trained physicians. Because of our expanding population, the total number of medical school graduates in the United States, if the present ratios are to be maintained, must be raised from 7,500 in 1960 to 8,100 in 1965 and to 11,000 in 1975.

Candidates for entrance into medicine in the United States have sharply decreased in number and have deteriorated in quality over the past decade. In Iowa, what is happening? We have not shared in the 40 per cent national decline in the number of applicants for entrance to medical schools. We are providing education for significantly more medical students per unit of population than is the United States as a whole, and rank tenth among the states in this respect. The S.U.I. College of Medicine ranks nineteenth in size of student body, and ninth among the state schools. In numbers graduating, it ranks twenty-first among all schools and tenth among the state institutions.

Iowa's expenditures for medical education are comparatively high. We rank twentieth among the states in gross personal income, but we spend 25-39 cents per $1,000 of personal income in support of medical education, a rate that is equalled by only 11 states and surpassed by just seven. Because income and population are related, it must be kept in mind for future planning that Iowa's population grows slowly. The expected increment by 1970 is 6 per cent.

The failure rate at the S.U.I. College of Medicine has not significantly increased, though nationally

the reverse is true. At S.U.I., the loss in the freshman year is significantly higher than the national average, however. Withdrawals are more numerous than failures. Many more figures could be given you, but suffice it to say that the freshman class that started in 1961 came from 310 applicants. I am happy to report that they have a much higher grade-point average than is usual.

Enough of statistics! What can you, the physicians of Iowa, do to enhance the numbers and the quality of candidates for medical schools? I strongly urge each county medical society to follow the leadership of two such organizations—one of them large and the other small—that have demonstrated their interest in this problem through definite recruitment activities. Each started its program a little over a year ago and has held meetings where from 30 to 40 interested high school and college students were shown a bit about medicine. The pioneering groups have been the Scott and Union County Medical Societies.

The plan, regardless of the name by which it may be called, can be stated generally as follows: (a) Letters are sent or personal visits are made to the superintendents and counselors of all county and city high schools, and to the appropriate officials of the colleges in the area, to enlist the cooperation of those officials and to identify the students who are capable and active in both paramedical and medical sciences. (b) Invitations are sent to them to attend a meeting—usually a dinner meeting. Sometimes—and I would recommend this —Drs. Hardin and Morris, of S.U.I., put on part of the program, undertaking to correct many common misapprehensions about medical education. Talks are given by practitioners about the economics of medicine and about the joys and sorrows of medical practice. Each student has as his particular host a physician who has informed himself about the interests of that particular student. Questions and answers frequently take several hours, and the doctors must be ready and alert in order to answer the many searching questions that these students ask. (c) Interest in regional science fairs—both personal and financial kinds of interest —must be exhibited by practicing physicians. Talented youngsters are more likely to interest themselves in us and in our way of life if we show some interest in them and in their intellectual pursuits. (d) We must encourage young people to visit our offices and let us show them the equipment with which we work.

This, then, is a summary of recruitment. How many societies will adopt this proposal and actively work at it? Only time will tell. Think about it! Try it!

MEDICAL SCHOOL SCHOLARSHIPS

Most of the physicians in Iowa, and even elsewhere in the country, know that I am unalterably opposed to federal aid in all spheres. When it can be demonstrated that a need is present and when it can be demonstrated that no one in the family, in the community or in the state will help a deserving individual obtain an education—then, and only then, should funds from higher levels be requested.

Recruitment by the other scientific disciplines have made serious inroads on the supply of top-notch students. There are many scholarships available in those other fields of study, but there are none for medicine on any large scale. Congress has taken note of this fact, and serious discussions are now being held about providing money to medical students from federal funds. Just what form these scholarships will take has not been divulged as yet.

I know that the S.U.I. College of Medicine has lost students to other schools because they offered scholarships and it did not. Dean Norman B. Nelson has taken cognizance of this fact and has made AMEF funds available to the Admissions Committee for 25 full-tuition scholarships. We have been able to compete for top-notch students since these have been in existence. There are now 28 scholarships available to freshmen, for in addition to those mentioned above, there is one each from the Iowa Clinical Medicine Society, the Iowa Obstetrics and Gynecology Society and the Iowa Clinical Surgery Society. It is our goal to have a total of 100 scholarships (25 for each year), but we have fallen short of this objective in spite of several gifts and bequests.

What can you physicians do to help? I propose that each of you discuss the problem with civic groups in your respective communities, and with those of your friends who might consider making gifts or bequests. Talk about it at the meetings of your county medical society and of the AAGP or specialty group to which you belong. More needs to be accomplished. It is up to you to help.

PHYSICIAN DISTRIBUTION

You are aware of the attempts that some communities have made to get physicians. Some of these attempts are successful; others are not. Are there reasons for their success or failure? I think that there are. (1) Some communities of 1,000 or fewer people, in Iowa, feel that since they had physicians in residence some years ago, they should get replacements easily. That is not a valid reason in itself, since the advent of good roads and modern transportation provides them better medical coverage from doctors in nearby towns than that which a local physician used to furnish them. (2) Business must be sufficiently active and *growing* so that the community can support *two* physicians, not just one. The trend toward group practice and away from solo work must be recognized, accepted and planned for. (3) Underutilization of local physicians must be guarded against. They won't stay in a town where people tend to call upon them only for first-aid work. (4) Modern educational facilities must be available. (5) There must be a number of other professional people in

town. (6) Physicians must prosper by virtue of their earnings, not as a result of gifts that compromise and restrict them.

Some time ago, I proposed to the Board of Trustees of the ISMS that a survey be made of towns of 2,000 or fewer people, in Iowa, for the express purpose of attempting to pinpoint what is needed to support not just one but *two* physicians. This survey should be made by an organization outside of the medical profession, and should consist of evaluations by economists, geographers, sociologists and others. Suffice it to say that interest in such an undertaking was aroused in several departments at the State University of Iowa. Since the project requires funds and since none have become available as yet, no progress has been made, but the project is still high on the agenda of the State Medical Society, and steps are being taken toward getting it started.

Perhaps many of you saw the article in the April issue of THE HOUSE PHYSICIAN REPORTER about a town in Wyoming that had just obtained a physician. The same picture could have been drawn of Farmington, Iowa. The Sears-Roebuck Foundation was active in both of those projects. The Sears-Roebuck Foundation has the approval, guidance and assistance of the American Medical Association, and in Iowa, the State Medical Society works closely with it. The Foundation makes its own survey, calls the townspeople together, and gets them to decide whether they will raise the funds to construct a building to cost around $35,000 and to house two physicians. The Foundation educates the community to the importance of total community support for the physician. Ordinarily, the physician rents the medical center from the town, and the Foundation guides him in all of his business problems. There are, at present, four towns in Iowa where Sears-Roebuck facilities are ready for occupancy. They are Carson,* Kimballton, Shelby and Woodbine.

I propose that you inform the leaders of communities that are attempting to obtain physicians: (1) that they should first get a professional, unbiased survey, either by the Sears-Roebuck Foundation or by a private group that I understand is now available for the purpose (Later on, we hope to have the more complete survey that I mentioned above.); (2) that group practice is here to stay, and that this fact must be taken into consideration —i.e., the town must be capable of supporting *two* physicians, and *two* physicians must be prepared for and must be sought; (3) that physicians are anxious for all of the citizens of Iowa to have medical coverage, but that since this is America, no force—either legislative or monetary—should be used in getting doctors either to settle or to stay in particular localities.

* Since Dr. Van Epps delivered this address, a young physician has announced his intention of occupying the facilities at Carson. A second doctor is now being sought.

HOME CARE OF PATIENTS

The demand for hospital beds and nursing-home facilities is increasing. Every hospital can point to patients who properly should have been cared for in their homes. Remedying this overuse of facilities could be undertaken as a community service sponsored by a public or voluntary health or welfare agency. Personnel could be employed to furnish home help services to families with children, to convalescent aged individuals, to the acute or chronically ill, and to disabled persons. The primary function of the home care service would be to maintain the household routine and to help preserve and maintain family life in times of illness and stress.

I propose that the physicians of Iowa accept the principle of home care of patients of all ages, so as to free as many hospital beds as possible, and I propose that they act as consultants and advisors to the administrators of the program, when requested.

This is my swan song. It has been my privilege to be your president for the past year. I have served to the best of my ability. I hope you not only are pleased with the proposals I have made to you today, but that you will take them to heart. Thank you, and good bye.

MISSISSIPPI VALLEY MEDICAL SOCIETY DISSOLVED

At a special meeting of the membership of the Mississippi Valley Medical Society, held at the Lincoln-Douglas Hotel, in Quincy, Illinois, on May 28, it was overwhelmingly recommended that the organization be dissolved. Final adoption of the proposal took place at a meeting held on June 18, after the 1,000 member physicians had been told about it.

It was thought that the American Academy of General Practice is conducting the postgraduate medical education which the MVMA had been created to provide. Funds currently in the treasury of MVMA (said to total $10,000) are to be given to the Society for Academic Achievement, an organization created in 1959 to constitute the high-school equivalent of Phi Beta Kappa.

The MVMS was founded in 1935 under the leadership of Dr. Harold Swanberg, a Quincy radiologist, and he served as its secretary throughout its existence. In the early years, its annual meetings were held at Quincy (4), Hannibal (1), Burlington (3), Rock Island (1), Cedar Rapids (1), Peoria (2) and Springfield, Ill., (3), but more recently they have been held alternately in Chicago and St. Louis. The MISSISSIPPI VALLEY MEDICAL JOURNAL, founded in 1924, was merged into CLINICAL MEDICINE last summer.

The medical writers' association of which Dr. Swanberg was the principal organizer and which has held its annual meetings in conjunction with MVMA, presumably will continue in existence.

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Scientific Articles

Aminoaciduria and Mental Retardation

Part One

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An intelligence quotient below 75, indicating mental retardation, is found in three per cent of our population. The great majority of the mentally retarded are slightly defective, having intelligence quotients ranging between 50 and 75; about 10 per cent are imbeciles (IQ's between 25 and 50); and only a few are idiots (IQ's below 25).

A multitude of factors and pathologic conditions, including heredity, chromosomal aberrations, and prenatal, perinatal and postnatal disturbances, can cause mental retardation. In this paper, a few obvious biochemical disturbances which affect or may affect mental development will be discussed. I emphasize the word *obvious* because it may well be that increased applications of biochemical methods and the development of new technics will unfold other chemical disturbances as causes of mental deficiency. This statement is supported by the recent experience of Thelander and Imagawa,[1] who checked at random 14 mentally-retarded children and found an increased urinary excretion of amino acid nitrogen in seven of them. The proportion was surprisingly high.

Mental retardation due to presently-known chemical disturbances is generally considered to be rather rare. Its incidence is probably less than five per cent of all cases of mental retardation.[2] Nevertheless, its recognition is important for several reasons:

1. The more severe degrees of mental retardation are probably commoner in this group than in many other categories of mental retardation. This is certainly true of phenylketonuria, maple-syrup-urine disease, mucopolysaccharidosis, cerebral lipoidosis and the severe form of hypercalcemia. Normal intelligence is exceptional in phenylketonuria and mucopolysaccharidosis (Hurler's disease).

2. Some of these conditions are amenable to treatment. Brain damage and the development of mental retardation can be prevented, fully or at

TABLE I

CLASSIFICATION OF METABOLIC DISTURBANCES AND DISEASES IN WHICH MENTAL RETARDATION OCCURS

1. Amino acid and protein metabolism:
   - Phenylketonuria
   - H- (Hartnup's) disease
   - Maple-syrup-urine disease
   - Argininosuccinic aciduria
   - Oasthouse-urine disease
   - Cystinuria and osteogenesis imperfecta
   - Cystathioninuria
   - Glycinuria
   - Histidinuria
   - Wilson's disease
2. Carbohydrate metabolism:
   - Hypoglycemia
   - Galactosemia[4, 5]
   - Sucrosuria
   - Fructose intolerance
   - Mucopolysaccharidosis
3. Lipid metabolism:
   - Cerebromacular degeneration
   - Niemann-Pick's disease
   - Infantile form of Gaucher's disease
   - Metachromatic form of diffuse sclerosis[8]
4. Others:
   - Severe form of hypercalcemia
   - Hyperbilirubinemia in newborns
   - Oculo-cerebro-renal syndrome of Lowe[6, 7]

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least partially, in phenylketonuria, maple-syrup-urine disease, Wilson's disease, galactosemia and some forms of hypoglycemia if treatment begins at an age before irreversible brain damage has occurred.

The principal forms of chemical mental retardation are listed in Table 1.

Little is known about the biochemistry of these conditions. In some of them, an enzyme deficiency has been found or is strongly suspected. Garrod,[3] many years ago, indicated some of the possible metabolic implications of the absence of an enzyme. If we assume that an enzyme catalyzes the conversion of substance A to substance B, its absence can lead to increased levels of A. This substance A, if present in excessive amounts, may exert a pathogenic effect, as for instance galactose-1-phosphate in galactosemia. Sometimes additional factors are necessary, as in kernicterus,[10, 11] where the increased permeability of the blood-brain barrier in the newborn period, hyperammonemia and maybe prenatal or perinatal anoxia enhance the toxic effect of the non-conjugated bilirubin on the brain cells. In other conditions, the excess of substance A may be metabolized through an alternate pathway, whereby abnormal and pathogenic substances are formed. This occurs in phenylketonuria and presumably in mucopolysaccharidosis. The biochemical disturbances of other conditions, for instance lipoidosis, hypercalcemia and cerebro-oculo-renal syndromes, are presently not fully understood.

On the following pages, some of the aminoacidurias associated with mental retardation will be discussed. Phenylketonuria will be taken up separately. Mental retardation due to disturbances of carbohydrate metabolism will be dealt with in a later publication.

Among the aminoacidurias associated with mental retardation, three groups can be distinguished:

1. There are the so-called overflow aminoacidurias due to hyperaminoacidemia. The renal tubules are presumably intact, but because of a metabolic disturbance or an enzymatic deficiency, the serum level of one or several amino acids is increased. This situation is found in phenylketonuria and in maple-syrup-urine disease.

2. In other diseases, an amino acid is found which under normal conditions does not participate in the formation of proteins. Such amino acids are not reabsorbed in the kidney tubules and are called "no threshold" amino acids. Argininosuccinic acid and, perhaps, cystathionine belong in this category.[12]

3. In a third group of diseases, normal serum levels of the amino acids are found. The aminoaciduria is due to deficient tubular reabsorption in the kidneys, in Hartnup's disease, Wilson's disease, Lowe's syndrome, galactosemia and others. The aminoaciduria in some of these conditions is not directly related to the mental retardation, but rather represents a concomitant symptom. Some amino acids are found in the urine of normal infants. Among these are lysine, serine, glycine, threonine, tyrosine and others. Their excretion decreases with increasing age.

MAPLE-SYRUP-URINE DISEASE

Menkes, Hurst and Craig,[13] in 1954, reported four patients with a new syndrome of infantile cerebral dysfunction. Their urines had a maple-syrup odor. Further cases were described subsequently by Menkes,[14] Westall,[16, 17] Dancis,[18, 19] Holt[20] and Mackenzie.[21] To date, fewer than 20 cases have been reported. Clinical signs of cerebral involvement, spasticity and convulsions are seen shortly after birth. Mental retardation ensues. The patient takes a rapid downhill course, and death occurs in most instances within the first few months. Untreated patients rarely reach the second year of life. Ferric chloride added to the urine yields a blue-black discoloration that differs from the blue-green color seen in phenylketonuria. The maple-syrup odor of the urine is pathognomonic.

The biochemical disturbances consist of an impairment of the metabolism of valine, leucine and isoleucine. These three amino acids are increased in the blood, spinal fluid and saliva.[21] Recently, high serum levels of methionine have been found as well.[20] These amino acids are increased in the urine. In particular, the urine contains excessive amounts of the corresponding keto-acids and alpha-hydroxy acids, whereas products of further degradation are not found. This indicates a defect of the decarboxylation due, presumably, to a deficiency of the decarboxylase of the branched-chain amino acids (decarboxylase-deficiency disease). Holt and his associates[20] found an additional, not fully recognized block in the conversion of methionine into cystine. They even believe that they have found evidence of a reversal of this reaction in maple-syrup-urine disease.

Mackenzie[21] and Menkes[15] suggested that such cases shoud be treated with a diet low in valine, leucine and isoleucine. Such an attempt has been made by Holt and others.[20] A two-week-old infant with maple-syrup-urine disease was treated with a diet restricted as regards these three amino acids and methionine. The blood levels of leucine, isoleucine and valine were checked by the diet, but the methionine level remained high. At the age of eight months, the infant was normal in its psychomotor development, and revealed no neurological abnormalities.

ARGININOSUCCINIC ACIDURIA

Allan and coworkers[22] found an abnormal, heretofore undescribed aminoaciduria in two siblings of an otherwise healthy family. Three other children were normal. Both patients, a boy aged six and a girl aged three, were severely retarded mentally. One of them had generalized convulsions, but the other did not, though his electroencephalogram revealed a convulsive pattern. Both had short, brittle hair. The urines of both contained an amino

acid which was later identified as argininosuccinic acid.[23, 24] This substance was found in the blood and in the spinal fluid as well. Its concentration in the spinal fluid was 2.5-2.9 times higher than in the serum, suggesting a metabolic disturbance within the central nervous system.

ALPHA-HYDROXY-BUTYRIC ACID AND PHENYLPYRUVIC ACIDURIA (OASTHOUSE-URINE DISEASE)

Phenylpyruvic aciduria has been described by Smith and Strange[25] in a female, first-born infant of an otherwise normal family. The baby had an unusual and unpleasant smell like an "oasthouse" or like dried celery. Soon after birth, the child began to have occasional extensor spasms. She responded poorly to external stimuli, and was extremely limp and flaccid. Her further course was downhill. She had frequent bouts of generalized edema. She remained severely retarded mentally, and died at 10 months of age.

The histologic examination of the brain revealed a widespread defect of myelinization. The ferric chloride test of the urine revealed the presence of phenylpyruvic acid. Furthermore, her urine contained alpha-hydroxy-butyric acid and an excess of phenylalanine, methionine and tyrosine. The presence of tyrosine is difficult to understand, and speaks somewhat against a deficiency of the phenylalanine hydroxylase as a cause of the increased production of phenylpyruvic acid. Further studies will be required to investigate the relation between this condition and phenylketonuria.

H- OR HARTNUP DISEASE

Baron, Dent and others,[26] in 1956, described a hereditary condition with pellagra-like skin rash, temporary cerebellar ataxia and constant renal aminoaciduria. The disease had occurred in at least three or possibly four of eight siblings of a family with consanguineous parents. The pellagra-like rash was localized in areas exposed to light, and was more pronounced in summer than in winter. In contrast to patients with true pellagra, these children showed considerable aminoaciduria, with the excretion of alanine, serine, asparagine, glutamine, valine, leucine, isoleucine, phenylalanine, tyrosine, tryptophan and histidine. Indican, indoleacetic acid and other indole compounds were found in great amounts in the urines, but no hydroxy derivatives of tryptophan (tryptamine, serotonine, etc.) were present. Several siblings were mentally retarded, but there was no constant correlation between mental retardation and aminoaciduria. Mental retardation was found in two children with, and in one child without, aminoaciduria. The authors concluded, therefore, that the mental retardation is presumably a hereditary trait that is independent of the aminoaciduria, though the biochemical defect may slowly cause a progressive mental deterioration.[26]

Other cases reported in the literature,[27] however, do not reveal any signs of mental retardation. Baron, Dent and others[26] conjecture that the disease is basically due to a disturbance of tryptophan metabolism involving, in particular, the conversion of trypotophan to nicotinic acid—hence, the pellagra-like symptoms. The massive aminoaciduria is of renal origin, since the serum levels of the amino acids are normal and since their renal clearance is greatly increased. The renal aminoaciduria may be due to a secondary impairment of the renal tubules caused by the deficiency of nicotinic acid. The administration of nicotinamide apparently brings improvement in some, but not in all, cases.[28]

CYSTINURIA WITH OSTEOGENESIS IMPERFECTA

Berry[29] described a sibship of five mentally retarded children. Three of them excreted excessive amounts of cystine, lysine, arginine and ornithine, and two revealed signs of osteogenesis imperfecta without blue sclerae. It is, however, possible that the combination of the aminoaciduria with mental retardation may have been coincidental in these cases, since the same amino acids are found in cystinuria, which is a benign hereditary disorder characterized by a defective tubular reabsorption of these amino acids.

HYPERGLYCINEMIA AND HYPERGLYCINURIA

A case of hyperglycinemia with urinary excretion of increased amounts of glycine and acetoacetic acid has been described recently.[30-32] In addition to the hyperglycinemia, marked increases in concentrations of serine, alanine, isoleucine and valine were found in the plasma, but not in the urine. The patient, a boy who was followed over several years, revealed a moderate degree of mental retardation and muscular hypotonia, periodic thrombopenia, hypogammaglobulinemia and neutropenia, with a tendency to contract repeated infections. The intake of usual amounts of proteins, and in particular of protein hydrolysate, leucine, isoleucine and threonine, precipitated periods of vomiting, anorexia, irritability and lethargy. Extensive investigation did not yield a full understanding of this interesting metabolic disorder. However, it can be differentiated from a hereditary form of glycinuria with nephrolithiasis, in which the psychomotor development is not impaired.[33]

HISTIDINURIA

Ghadimi and others[37] described the case of a three-year-old girl with a retardation of speech, fair hair and blue eyes. The ferric chloride test was positive, yet the serum phenylalanine was within normal limits. The fasting plasma histidine was about five to eight times the normal level, and the urinary excretion of histidine was increased as well. The same metabolic anomaly was found in the five-year-old sister of the patient.

CYSTATHIONINURIA

Harris[12] found cystathioninuria in an elderly imbecile and in two of her relatives. A postmortem examination revealed increased amounts of cystathionine in the liver and kidneys. It is possible that

cystathioninuria belongs to the category of the "no threshold" aminoacidurias. Harris, however, believes that it is due to a defect of the enzyme system which normally cleaves cystathionine into cysteine and homoserine.

DIAGNOSTIC CONSIDERATIONS

It certainly would not be economical to search for a disturbance of the amino acid metabolism in every case of mental retardation, though a pilot study of amino acid metabolism in a random series might increase our understanding of certain chemical aspects of the phenomenon. For practical purposes, however, one must ask the basis on which one can choose the cases of mental retardation that require chemical investigation.

Since many forms of mental retardation with aminoaciduria are of hereditary origin, it may be profitable to select familial cases, and among them to choose the cases of severe mental retardation. In addition, one might pick cases having a peculiar aspect suggestive of a "special syndrome,"[2] especially if the prenatal and perinatal history is unrevealing.

The ferric chloride test should be a routine procedure, but what other tests should be performed if the ferric chloride test is negative? Some workers do a paper chromatographic examination in such cases. Hsia[28] and Paine[2] suggest that the alpha-amino-nitrogen be determined in urine and serum. A serum level of alpha-amino-nitrogen above 4.5 mg./100 ml., and a daily urinary excretion of 4 mg./Kg. of body weight are considered abnormal, though the protein intake may influence the excretion of amino nitrogen.[34] The finding of increased amounts of alpha-amino-nitrogen in the serum and urine calls for a paper chromatographic analysis of the urinary amino acids, and in special cases, for the determination of selected amino acids in the serum.

SUMMARY

The various biochemical disturbances leading to or associated with mental retardation have been reviewed and discussed, with particular reference to symptomatology, pathogenesis and possible treatment of the diseases presenting a disturbance of the amino acid metabolism.

Phenylketonuria will be discussed in the subsequent and concluding part of this paper.

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Introduction to Medical Genetics

Part One

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I wish to dedicate this presentation, with profound gratitude and respect, to Emil Witschi, Ph.D., M.D. (University of Basel, honoris causa), emeritus professor of zoology at the S.U.I. College of Medicine. Dr. Witschi has been my teacher and scientific mentor for 10 years.

Every busy physician, regardless of his specialty or type of practice, sooner or later encounters not only single or multiple congenital malformations, in children or adults, but also hereditary disorders —anatomic, physiologic or both, of early or late onset, of varying degrees of mildness or severity, as isolated instances or with extensive pedigrees, and with diverse modes of inheritance.

In every situation, the physician may choose either of two lines of investigation: a retrospective and a prospective one. First, he must decide whether he is dealing with a hereditary condition, or with an isolated or repetitive teratologic accident. In theory this sounds simple, but in practice it can frequently be very difficult, if not impossible, for there are many conditions inherited in two, if not three, possible ways, and also "imitated" by such diverse teratologic factors as rubella, toxoplasmosis, anoxia or radiation. Whatever the answer may be in a given case, the physician must finally fulfill his responsibility by estimating the chances for a repetition of the defect and by explaining the modes of inheritance, if the condition appears to be hereditary.

The following frequently confused concepts should first be clarified. *Congenital* refers to any abnormal morphologic or physiologic condition present at birth—either hereditary, or due to isolated or repetitive teratologic accidents. *Familial* is a term applied to an abnormality that occurs among several blood-related family members, usually on a horizontal basis—i.e., among individuals of the same generation, frequently encompassing several brothers and sisters and perhaps a cousin or two, but most of the time including siblings of just one family. Used in this manner, the word has become synonymous with *hereditary* in the minds of many people, especially as regards recessive inheritances. If some form of heredity can satisfactorily explain the accumulation of cases in the family, *hereditary* is the preferable term. The word *familial* is best reserved for situations where heredity cannot explain the accumulation of cases in a family. *Trait* is a term most commonly used for heterozygous states such as the sickling trait, but many people employ it in a broader sense to include all hereditary conditions regardless of the manner of inheritance.

CONGENITAL MALFORMATIONS

Table 1 is a list of the commonest teratogenic factors known or thought to cause congenital malformations in man. It must be admitted that in most random cases it is impossible to determine the teratologic agent or event in retrospect. Furthermore, the type of defect does not allow us to deduce the pathogenesis, since many diverse teratologic factors lead to similar or identical end results. A few of the conditions which may be inherited and may appear as teratologic imitations (phenocopy) are gathered in Table 2. Multiple congenital anomalies are rarely "inherited," simply for the reason that the affected child usually does not live long enough to reproduce. However, the occurrence of increased numbers of offspring with multiple congenital anomalies in consanguineous marriages suggests some genetic factor in their pathogenesis (Schull). During the period of

TABLE I

KNOWN AND UNKNOWN TERATOGENIC FACTORS IN MAN

Radiation
Toxoplasmosis
Rubella (polio? influenza viruses?)
Aminopterin
Steroids (pseudohermaphrodism)
Maternal age (both extremes)
Paternal age
Poor maternal nutrition and I_2 and vitamin deficiencies
Parity
Anoxia
Chromosomal aberrations
Consanguinity

Until recently a resident at University Hospitals, Iowa City, Dr. Opitz is now a member of the faculty of the Department of Pediatrics at the University of Wisconsin. This is the first of two parts of his paper on elementary medical genetics. The second will appear in the August issue of the JOURNAL.

TABLE 2

CONDITIONS THAT MAY BE INHERITED AND MAY OCCUR AS A PHENOCOPY AS WELL

Microphthalmia	Ear deformities
Colobomas	Spina bifida
Cataracts	Some forms of congenital heart disease
Anencephaly	Anal atresia
Microcephaly	Clubfoot
Craniosynostoses	Hypospadias
Cleft lip, palate and face	

organogenesis (up to 12 weeks of gestation) the embryo is most vulnerable to teratogenic factors. During this time, exposure to large amounts of radiation, toxoplasmosis, anoxia or rubella may produce a rather uniform picture of microcephaly and microphthalmia, cataracts, mental retardation, deafness and congenital heart disease. In practice, we have found that there are certain minor deformities which are useful indicators of multiple congenital anomalies. They are:

1. Stunting of growth
2. Hypertelorism
3. High arched palate
4. Cardiac murmur or evidence of congenital heart disease
5. Gonadal damage or cryptorchidism
6. Mental retardation
7. Deformed ears
8. "Poor connective tissue" or various degrees of supraspinal hypotonia.

Sometimes only one or two of these are found in a mildly affected patient, and many times the presence of several of these signs will influence us to place the etiology of a mental retardation on a congenital basis rather than on birth injury or the like. If these signs are present and if the child is severely impaired, they are an indication, usually, that other anomalies are present, constituting the picture of "constitutional inadequacy" or, as it used to be called, "the degenerative type."

If the teratogenic insult is great enough, the pregnancy will terminate in abortion. There is good clinical evidence that at least one-third if not one-half of ova or zygotes before or at the time of implantation may be severely defective. Witschi and others have suggested that overripeness of the ovum at the time of fertilization may lead to many malformations (blastophthoria). The ovum and sperm may also possibly be damaged by such diverse factors as alteration of pH and O_2 and CO_2 saturation, medications and other chemicals in the mucosal secretions, as well as infections. These can lead not only to cytoplasmic but to genetic or even chromosomal defects. If the same or similar factors are acting repeatedly over a long term, it can easily be understood how a woman can produce several misfits in a row. Thus, there exists a spectrum of reproductive fitness ranging from normality to minimal unfitness (the latter resulting in non-detectable or minor defects in the progeny), to a moderate degree of unfitness (productive of severely affected children) and finally to the most unfit in whom an insult leads to the death of the ovum before or after fertilization, or results in faulty implantation, early destruction of the embryo and abortion (Hertig).

Genetic factors have also been suggested as predisposing the early embryo to react adversely to unfavorable environmental conditions (Warkany). However, we find it difficult to believe that such a great number of mutations can lead to the wholesale destruction or crippling of one-third or one-half of the conceptions of a species. On the one hand, these genetic factors certainly would not favor the survival of the species in a Darwinian sense. On the other hand, this selective weeding out of defective zygotes may preserve the species from too many unfit members, and it appears as if this may be the occasion for the most rigorous natural selection performed on the species. Nevertheless, congenital anomalies account for at least 15 if not 20 per cent of the perinatal deaths and contribute at least 20,000 deaths annually.

HEREDITARY CONDITIONS

Terminology. A *mutation* is a new, heritable abnormality of structure and function, due to an alteration of the basic hereditary material in one gene. If only one pair of corresponding (allelic) genes is affected and yet will produce the defect in the child, the *genotype* (i.e., genetic make-up) is *heterozygous* and the mutant is *dominant* over its normal *recessive* allele. If the condition is re-

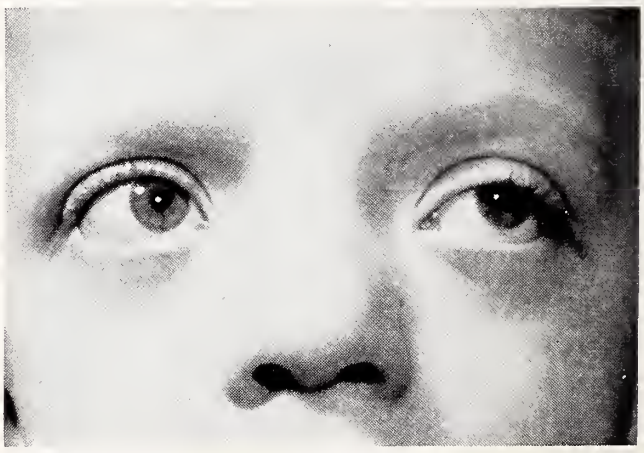


Figure 1. Hypertelorism in a seven-year-old boy (S.U.I. Hospitals No. 54-6419) with (?) male Turner syndrome, chest deformities, high arched palate, pulmonic stenosis, short stature and cryptorchidism. The deformity consists of a broadened bridge of the nose, with an increased distance between the eyes due to hypertrophy of the greater wing of the sphenoid bone.

cessive, two mutant alleles are required *(homozygosity)* to produce the *phenotype*, or clinically overt manifestation. There are some genes which are not quite dominant, and others not altogether recessive. In the former, the heterozygotes do not always manifest the condition, and in the latter, some of the heterozygotes which usually show no traces at all *(carriers)*, are found to display partial manifestations of the trait. Thus, there exists a spectrum of gene effects in the heterozygous state, ranging from the completely dominant to the incompletely dominant, the incompletely recessive and then to the completely recessive with normal phenotype. (In Table 3 some of the standard pedigree symbols are listed.)

Dominant Inheritance. Classically dominant traits are manifest in the heterozygous state. Thus, there are usually no "hidden" carriers as with recessive conditions. It should be possible to eradicate the trait from the human gene pool through preferential marriage, if it were not for a certain mutation rate which keeps reintroducing the gene into the population. Compared with the total pool of recessive genes, the number of dominant mutations is small. Also, many of the dominant traits such as crooked fingers, webbed toes and deformed ears are quite harmless. We must have a set of gene loci peculiarly susceptible to dominant mutuation, for over the centuries the types of dominantly inherited conditions have stayed remarkably constant, and it is exceedingly rare for a hitherto unknown dominant anomaly to be newly described. Many pedigrees may be traced over the centuries. There are, for example, the Hapsburg lip and the symphalangism that is known to have affected John Talbot, the first Earl of Shrewsbury. He was killed in battle near Bordeaux in 1453, and his skeleton, identified by the axe injury to the skull and the broken thigh that he incurred when he fell off his horse, bore indications of the same condition that many of his descendants have today (Gates).

A dominant pedigree is usually easy to identify. The condition may be passed on equally well by men and women, and should occur in one-half of the offspring if an affected heterozygote marries a normal person, as is generally the case. The anomaly descends directly from generation to generation, and a normal person may not transmit it. Apparent exceptions will be discussed below. Figures 2 to 6 illustrate some dominant conditions, and pedigrees 1 to 4 are examples of dominantly inherited conditions studied at the S.U.I. Hospitals. The trait is infrequently found in the homozygous state, since two persons with the same dominant illness rarely marry. Furthermore, there

TABLE 3

Pedigree Symbols

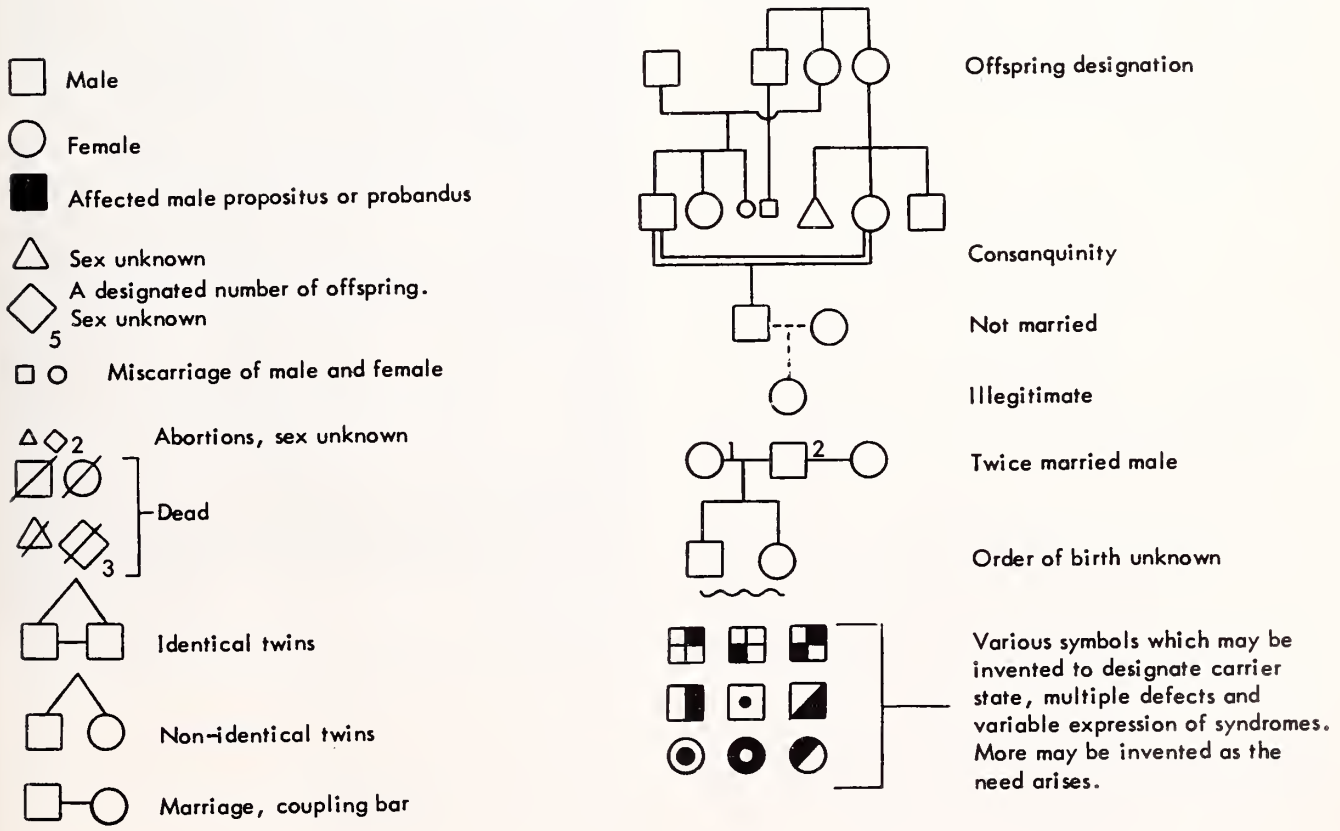


Figure 2. Osteogenesis imperfecta in a four-year-old girl. A dominantly inherited syndrome consisting usually of the triad of blue conjunctivae, fragile bones with many fractures and otosclerosis, occasionally associated with amelogenesis imperfecta. Frequently poorly penetrant, with highly variable expressivity (S.U.I. Hospitals No. 53-10002).

is evidence that the homozygous state for several anomalies is lethal. The ratio of affected offspring is as follows: (marriage of Dd x dd, where "D" is the dominant mutation and "d" is the recessive normal gene).

	D	d
d	Dd	dd
d	Dd	dd

Recessive Conditions. For a recessive trait to become manifest, the individual must be homozygous for the mutant gene. The inheritance is expressed as follows: ("P" = normal, dominant allele of "p" the recessive mutation; "PP" = normal, "Pp" = heterozygous carrier state, "pp" = the manifest state.) Marriage between two carriers (Pp x Pp):

	p	P
p	pp	pP
P	pP	PP

The results, theoretically, are one-fourth affected individuals, one-half carriers and one-fourth unaffected. If an affected homozygote marries a normal person (pp x PP), none of his children will be affected, but all will be carriers:

	p	p
P	Pp	Pp
P	Pp	Pp

and if the carrier marries a normal person (pP x PP):

	p	P
P	Pp	PP
P	Pp	PP

one half of his children will be carriers, and the other half will be normal. Recessive illnesses are therefore seen most commonly in siblings with normal parents and with no affected persons in

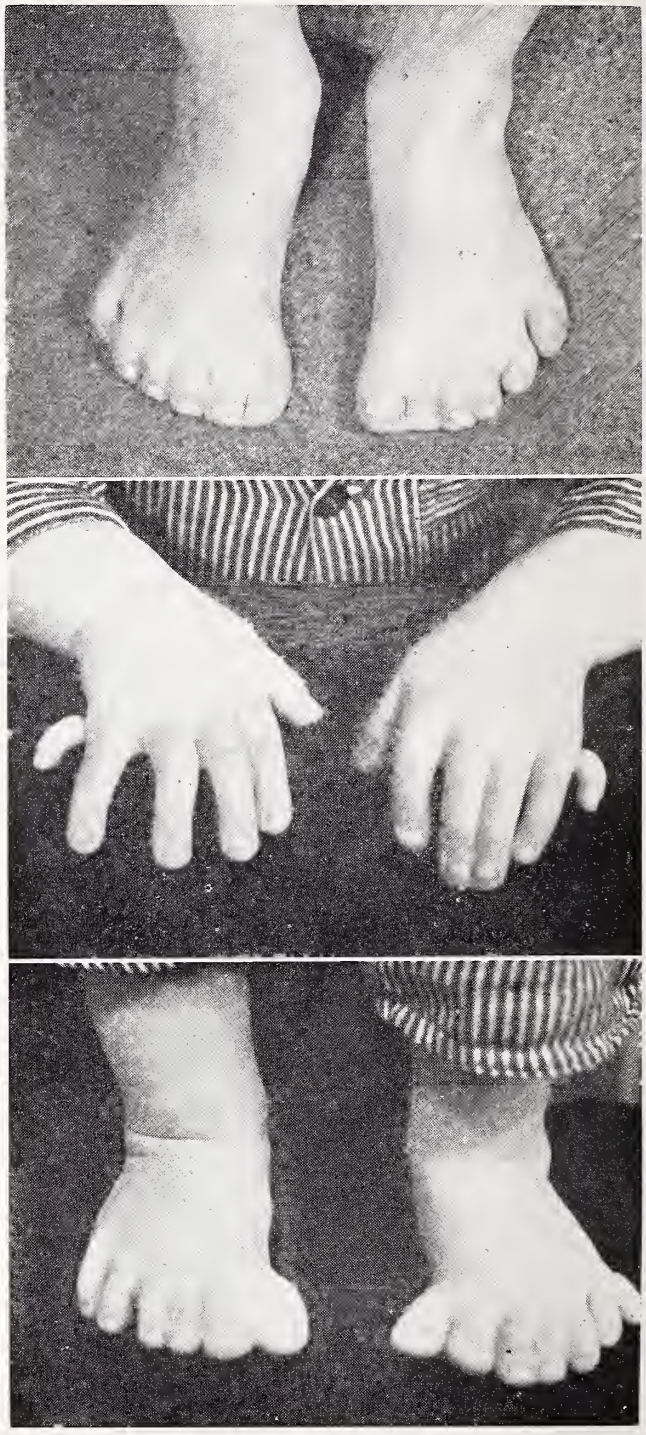


Figure 3. The top photograph shows the feet of a patient with polydactylism and syndactylism (S.U.I. Hospitals No. 59-3226). This man had normal hands. The middle and bottom photographs show the hands and feet of that patient's brother, with polydactylism and syndactylism of both hands and feet. These deformities are dominantly inherited, with variable expressivity such that no member of the family has exactly the same manifestations.

collateral lines of the family, unless there is intermarriage.

It comes as quite a surprise to most people that

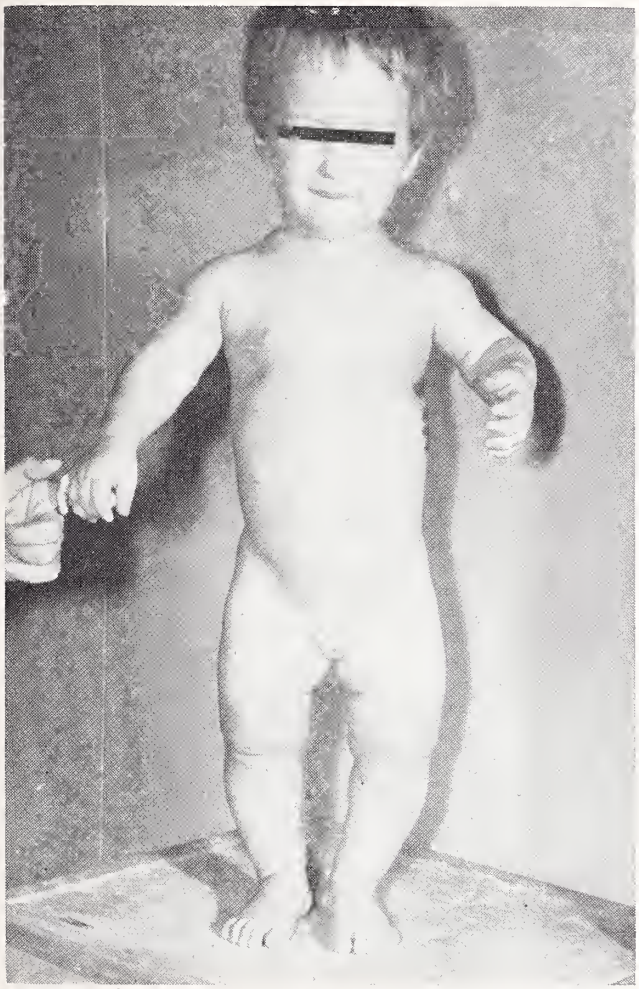


Figure 4. Achondroplasia (S.U.I. Hospitals No. 59-15011). Dominantly inherited.

Figure 5. Generalized neurofibromatosis of von Recklinghausen (S.U.I. Hospitals No. 60-5272). Dominantly inherited, with variable expressivity ranging from a few café-au-lait spots to the appearance of the patient in this photograph, with many internal tumors and a sarcoma of the scalp.

Figure 6. Epidermolysis bullosa in an infant (S.U.I. Hospitals No. 46-12897). Dominantly inherited.

carrier states for rare recessive diseases are so common. As a matter of fact, everyone probably carries at least eight very deleterious recessive genes, some of which lead to death in the homozygous state, and others to severe mental retardation and multiple congenital anomalies severely handicapping to the individual (Mueller). The chances of obtaining homozygosity are greatly increased by consanguinity such as first-cousin marriage, and difficulty can almost certainly be expected in cases of incest (Pedigree 5). For example, the incidence of recessive albinism is 1:20,000, with a gene frequency of 1:141 and an incidence of the carrier state of 1:70, or 1.4 per cent of all "normal" pople. The incidence of marriage of two heterozygotes is between 1:4,900 and 1:5,000.* The chance, however, that an individual is a carrier if he has a known heterozygous cousin is 1:8, and the chance of there being an affected child in a first-cousin marriage would then be 1/70 x 1/8 x 1/4 or 1:2,240 versus 1:20,000, or an eight-times greater likelihood of there being an affected offspring.

Thus, consanguinity was frequently the hallmark of pedigrees of rare recessive illnesses, especially in closely-knit communities and in racial isolates. Nowadays, consanguinity is rarely found among parents of children with relatively rare recessive conditions such as phenylketonuria, the adrenogenital syndrome, fibrocystic disease of the pancreas, galactosemia and others. However, the

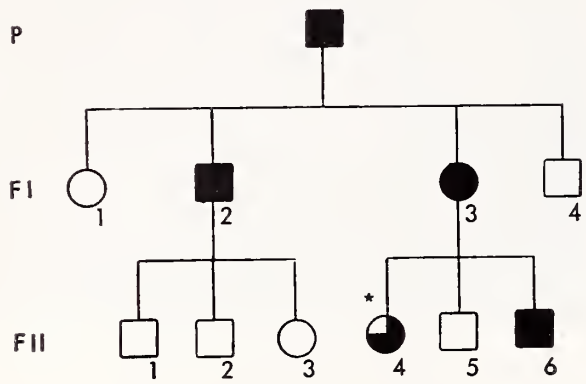
* These figures are derived from the Hardy-Weinburg law that concerns the ratios of individuals in a population equilibrium in which the two alleles "a" and "A" occur, and the three possible genotypes are "aa," "aA" and "AA." If the frequency of gene "A" = p, and that of gene "a" = q, then the Hardy-Weinburg law states that the distribution of individuals in the population, both parental and after one or more random matings, will be:

$$AA : Aa : aa$$
$$p^2 : 2pq : q^2 \text{ (where } p + q = 1)$$

Applying this to albinism where $q^2 = 1:20{,}000$, then $q = \sqrt{20{,}000}$, or 1:141, and the frequency of the normal allele is 140/141, or approximately 1. Thus, the frequency of carriers (Aa) is 2pq, or approximately 1/70, and the random mating of two carriers ($2pq \times 2pq = 4p^2q^2$) = 1:4,900.

PEDIGREE 1

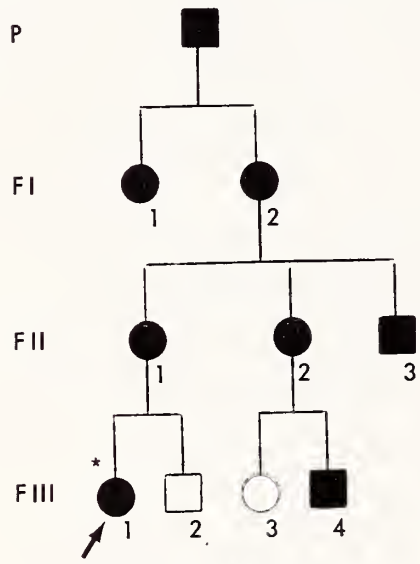
Accessory Post Minimus, Bilateral



*Only one hand affected
Variable expressivity

PEDIGREE 2

Epidermolysis Bullosa

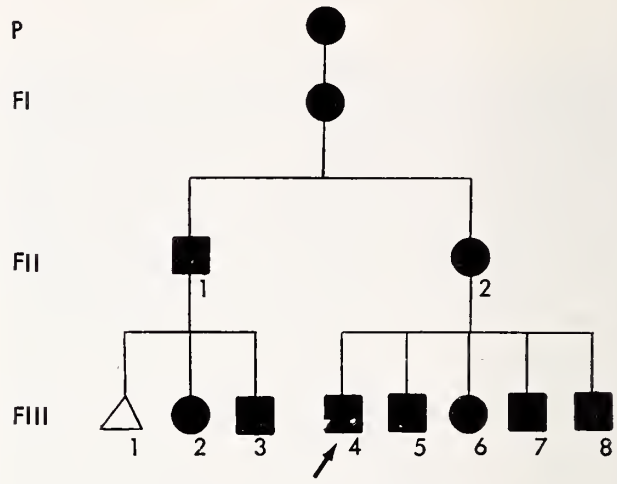


SUI Hosp. #56-16208

*IVSD

PEDIGREE 3

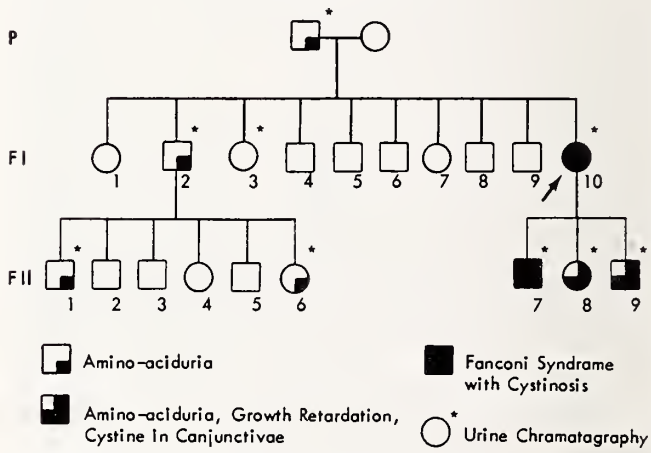
Congenital Microspherocytosis



SUI Hosp. #59-13595

PEDIGREE 4

Fanconi Syndrome



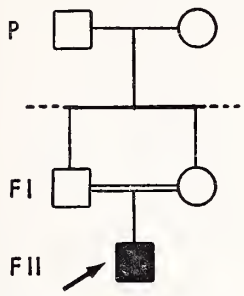
Pedigree 1: Accessory post-minimus, dominantly inherited with variable expressivity. Pedigree 2: Dominantly inherited epidermolysis bullosa. Propositus entered S.U.I. Hospitals for repair of IVSD (No. 56-16208). Pedigree 3: Congenital microspherocytosis. Dominant with full penetrance and expressivity (S.U.I. Hospitals No. 59-13595). Pedigree 4: Fanconi syndrome. The husband of FI-10 was never examined. This appears to be dominant inheritance with incomplete penetrance and variable expressivity.

rarer the gene, the greater the chance that there is consanguinity between the parents of the affected child.

Occasionally it is difficult to determine the type of heredity one is dealing with because of the variables of *penetrance* and *expressivity*. These terms cause much confusion. *Expressivity* means the appearance of varying phenotypes from one genotype because of modification of gene action by other genes, or because of internal or external environmental factors. In clinical terms, the simplest equivalent of expressivity is severity. The term is also frequently applied to the polymorphism of syndromes, and it is synonymous there with the variable effects of a pleiotropic gene (i.e., one that produces multiple manifestations). For example, the recessively-inherited Laurence-Moon-Biedl syndrome ranges from fully expressive in a patient with polydactylia, obesity, infantilism, mental retardation, retinitis pigmentosa and deafness, to partially or incompletely expressive in related (probably heterozygous) family members with just polydactylia or mental retardation and infantilism, or deafness and retinitis pigmentosa. *Pen-*

PEDIGREE 5

Fanconi Syndrome



SUI Hosp. #51-9570
Nerve deafness. Rickets, Chronic Acidosis, Aminoaciduria and cystinuria. Unable to acidify urine
Nephrocalcinosis

Pedigree 5: Apparently recessive Fanconi syndrome with many other congenital morphologic and physiologic anomalies in a boy from an incestuous (brother-sister) union.

etrance is a term usually applied to dominant conditions, and signifies simple presence or absence of the trait in an individual who has affected children. This is usually an all-or-none proposition. High penetrance and high expressivity go together. It is thus infrequently possible for an individual with a non-penetrant dominant illness, considering himself fortunate to have escaped, to pass the state on to his children.

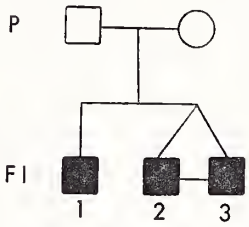
Another aspect of gene expression is the time of onset. Some conditions are present at the time of birth; others develop in later life (Huntington's chorea and olivo-ponto-cerebellar degeneration well known to the physicians of northwest Iowa); and for some time it appears as if the unfortunate victim will escape the illness, but it "catches up with him" at a characteristic age for each condition. These traits are known as the *abiotrophies*. This term is frequently used with reference to the ocular fundus lesions of late onset—optic atrophy, macular dystrophies, generalized fundus dystrophies, etc.

It is possible nowadays to test for the heterozygous carrier state in a number of conditions by various means. These technics are usually applied in a retroactive manner to the parents, but in the future it ought to be useful in identifying the carriers in a family with an affected member. Pedigrees 6, 7 and 8 and illustrations 7 to 12 are examples of some recessively-inherited diseases in which the carrier state may be detected. In Table 3 are listed some recessive conditions and population distributions, together with frequency estimations if available.

Sex-linkage. Pedigrees 9 and 10 are examples of sex-linked recessive conditions. In this type of in-

PEDIGREE 6

Congenital Adrenal Insufficiency

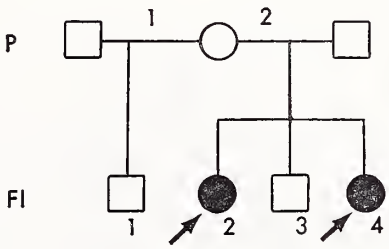


SUI Hosp. #58-11985
60-17786
60-17785

Pedigree 6: Congenital adrenal insufficiency in a boy and his twin brothers. Apparently recessive inheritance.

PEDIGREE 7

Salt-losing Adrenogenital Syndrome



SUI Hosp. #56-14642

Pedigree 7: Salt-losing adrenogenital syndrome in two sisters. Recessively inherited.

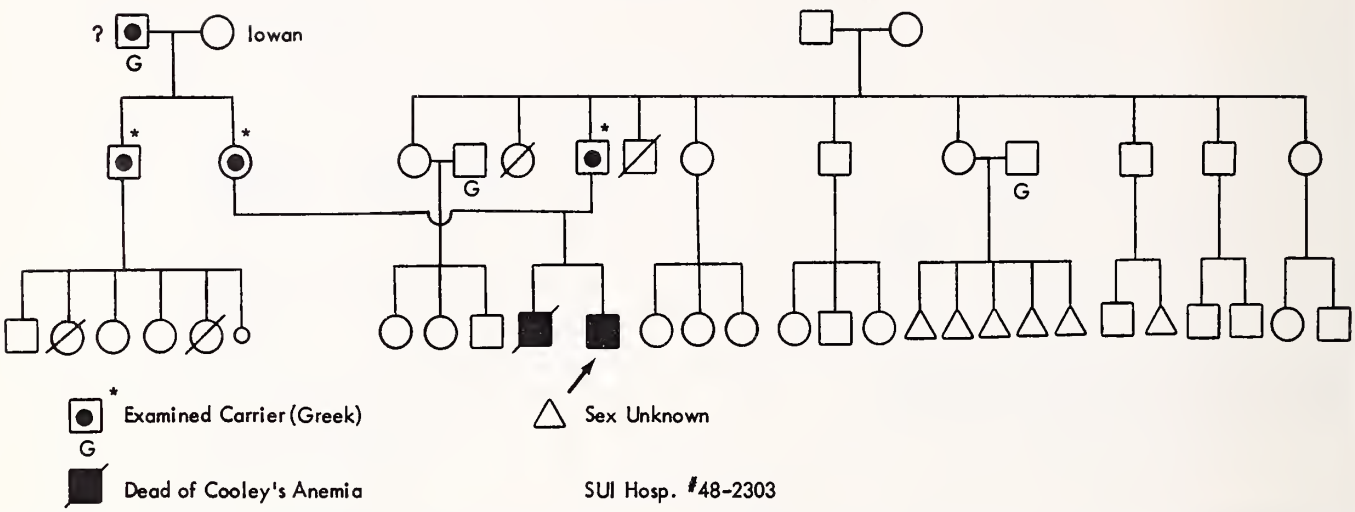
TABLE 4

SOME RECESSIVE CONDITIONS

Acatalasemia (Japanese only)
Congenital hyperbilirubinemia (Crigler, Najjar), very rare
Pentosuria (1:50,000, Jewish only)
Fructosuria (1:130,000)
VanGierke's disease (1:280,000)
Cystinuria (1:380 to 1:585)
Sickle-cell anemia (2 to 45 per cent of African negroes; 10 per cent of American negroes)
Galactosemia (very rare)
Wilson's disease (1:4,000,000)
Phenylketonuria (1:25,000, U.S.A.; 2-6:100,000, U.K.)
Cooley's anemia (1:100,000, general U. S. population; 1:625 to 2 per cent, Mediterranean population)
Adrenogenital syndrome (1:67,000, U. S.)
Fibrocystic disease of the pancreas (1:1,000)
Albinism (1:10,200, U. S.; 1:20,000, U.K.; 1:100,000, France)
Infantile amaurotic family idiocy—Tay-Sachs (Jewish only)
Juvenile amaurotic family idiocy—Spielmeyer-Vogt (Swedish predominance)

PEDIGREE 8

Cooley's Anemia



Pedigree 8: Cooley's anemia in two brothers. Those members of the family who are known to carry the characteristic blood picture are indicated.

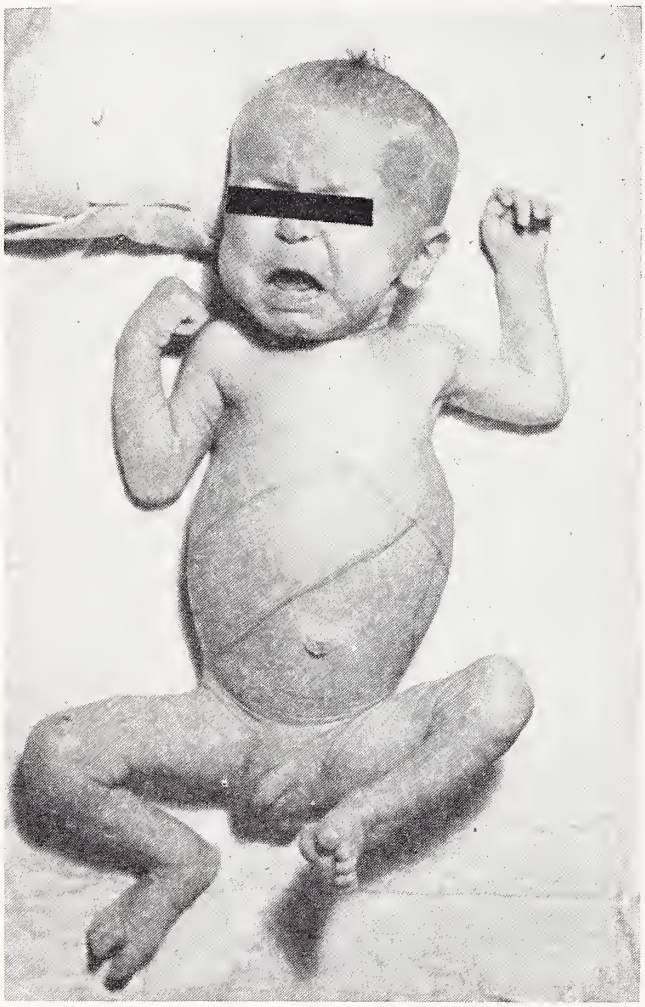


Figure 7. "John" of pedigree of galactosemia (Fig. 8). Photograph demonstrates relative malnutrition, hepatosplenomegaly and prominent veins over the distended abdomen.

heritance, the genes are located on the heterologous segment of the X chromosome and are usually recessive. Thus the heterozygous carrier female is typically normal, and the abnormal X chromosome may be passed through many generations of women before it enters into combination with a Y chromosome to produce the illness in a male. In this state there is no corresponding normal allele on the heterologous segment of the Y chromosome, and the mutant gene acts unopposed. This is known as the *hemizygous* state. Now we can understand how the illness appears to skip generations—going from an affected male to a phenotypically normal female, who may pass it on to a son. The most common pattern of inheritance involves the marriage of a carrier female ($\overline{X}X$) with a normal male (XY):

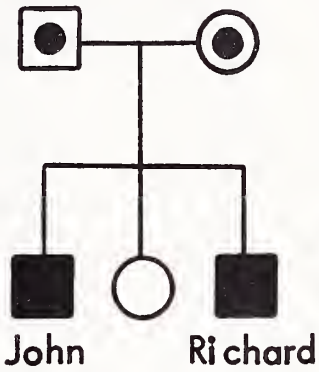
	X	Y
$\overline{X}$	$\overline{X}X$	$\overline{X}Y$
X	XX	XY

The distribution is one-fourth carrier females ($\overline{X}X$) and one-fourth normal females (XX); one-fourth affected sons ($\overline{X}Y$) and one-fourth normal sons (XY). In other words, one-half of the daughters of a carrier mother are again carriers, and one-half of her sons may have the illness. In the pedigree of hemophilia illustrated, the disease apparently arose as a mutation in one of the X chromosomes of the mother, who has by now given birth to five hemophiliac boys out of six. In at least one-third of the cases of hemophilia seen at

GALACTOSE TOLERANCE IN GALACTOSEMIA

	Fasting	1 hour	2 hours
Mother	2.2	1.5	2.8
Father	2.2	1.0	2.7
John	0.8	0.4	0.9
Richard	0.0	-	-

All affected usually below 1.07
Normals 4.4 ± 1.5
Heterozygotes between 1.07 and 4.4
In units of galactose - 1 - phosphate uridyl
Transferase / Gm Hgb
Done in laboratory of Dr. David Y.-Y. Hsia
Children's Memorial Hospital, Chicago



SUI Hosp. #54-5413
#48-9605

Figure 8. Galactose tolerance in galactosemia. Detection of the carrier state of the recessively inherited metabolic defect. Pedigree illlustrates carrier state of the parents and the homoz/gous state of the two affected sons. Recessive inheritance.

Figure 9. First affected daughter in pedigree No. 7 (S.U.I. Hospitals No. 56-14642) with salt-losing adrenogenital syndrome (female pseudohermaphrodism). Photograph shows the limp and severely-ill infant with vascular mottling of the extremities seen in Addisonian crisis, as well as the large clitoris characteristic of the syndrome.

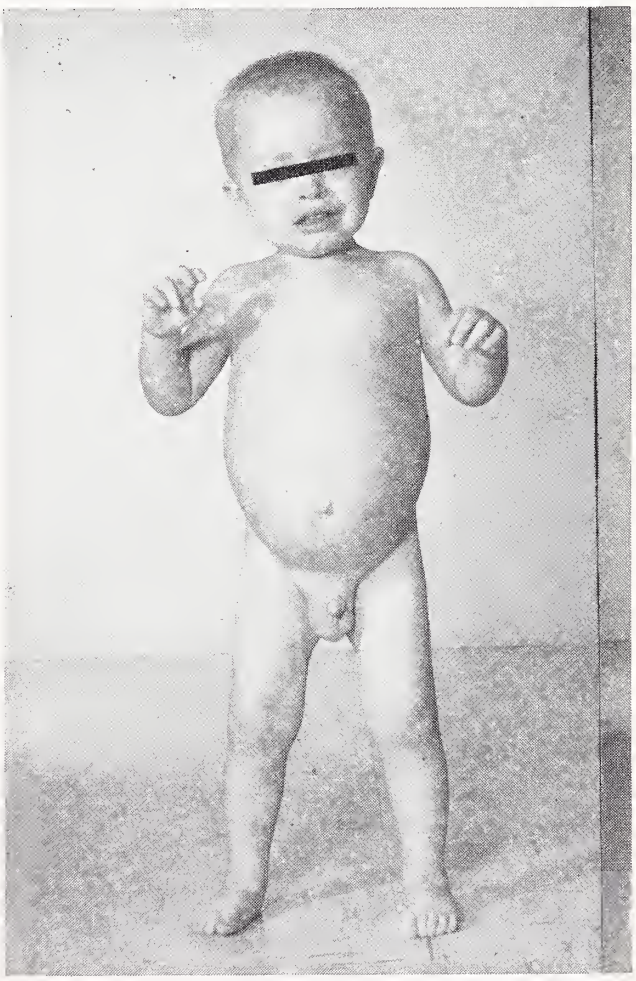


Figure 10. Niemann-Pick disease, recessively inherited. Photograph shows tremendous hepatosplenomegaly and right inguinal hernia (S.U.I. Hospitals No. 58-879).

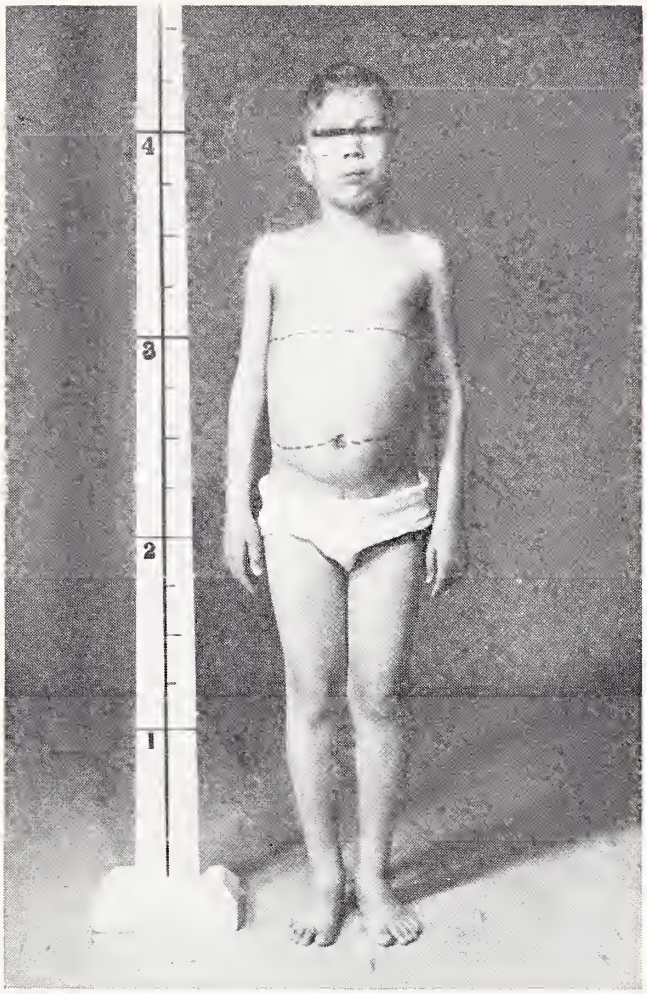


Figure 11A. J. V., a 12-year-old boy with Cooley's anemia, recessively inherited (see pedigree No. 8). His "dirty" skin pigmentation is evident in the photograph, as is the huge liver and the old splenectomy scar.

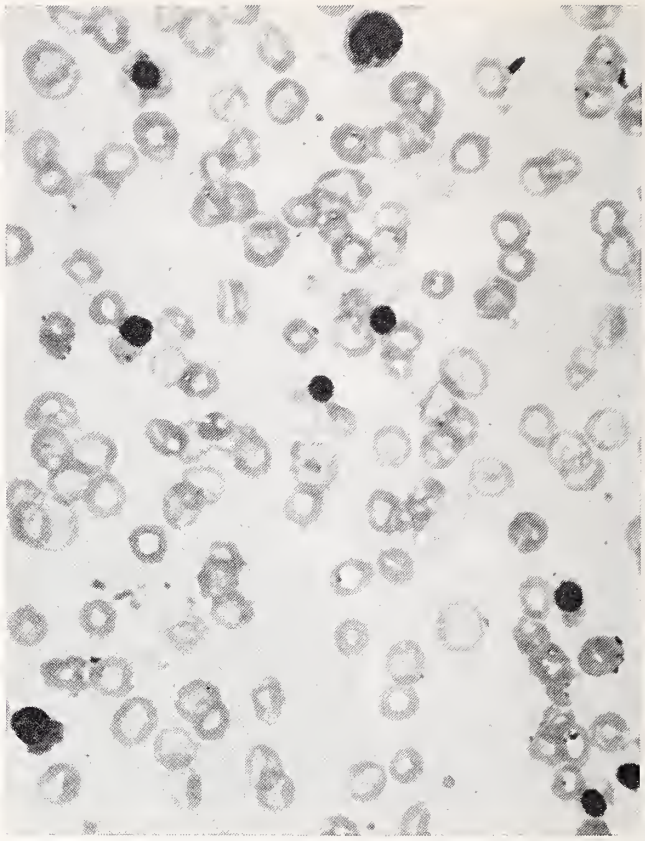
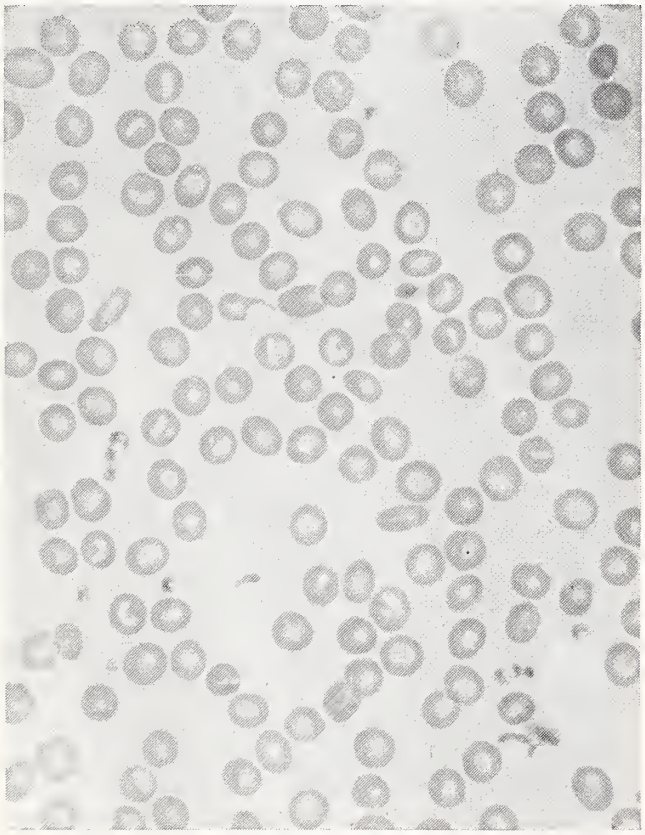
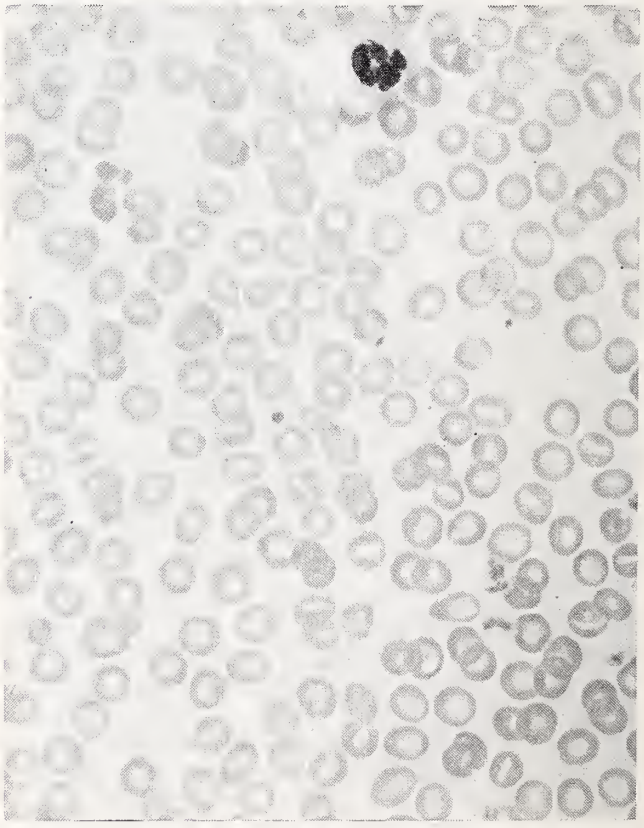


Figure 11B. Photomicrograph of a blood smear of J. V., showing red and white cell morphology typical for Cooley's anemia (x 800).





Figures 11C and 11D. Blood films of the parents of J. V., interpreted as showing red cell morphology suggestive of the heterozygous carrier state of Cooley's anemia (x 800).

the S.U.I. Hospitals, there has been no family history of bleeding disorders.

This pedigree illustrates another point of great importance in heredity counseling. Predictions of risk and of ratios of affected versus unaffected children are notoriously unreliable. It must be emphasized again that having had two affected children in a dominant illness does not guarantee that the next two will be normal, or that the next six will be normal if the illness is recessive. In small groups, the chances are not cumulative but repetitive, i.e., for a dominant trait there is a 1:1 chance *with each conception,* regardless of how many affected offspring have preceded a particular pregnancy.

Dominant Sex-linked conditions are rare. Dentists sometimes encounter hypoplasia of the enamel, and the condition of vitamin D resistant rickets due to hypophosphatasia is reported also to be dominantly sex-linked. At first glance, such a pedigree would appear to be autosomal dominant, if it were not for the fact that a male with the trait may never pass the condition to a son, but only to an affected daughter, who may transmit the trait to one-half of her daughters and one-half of her sons.

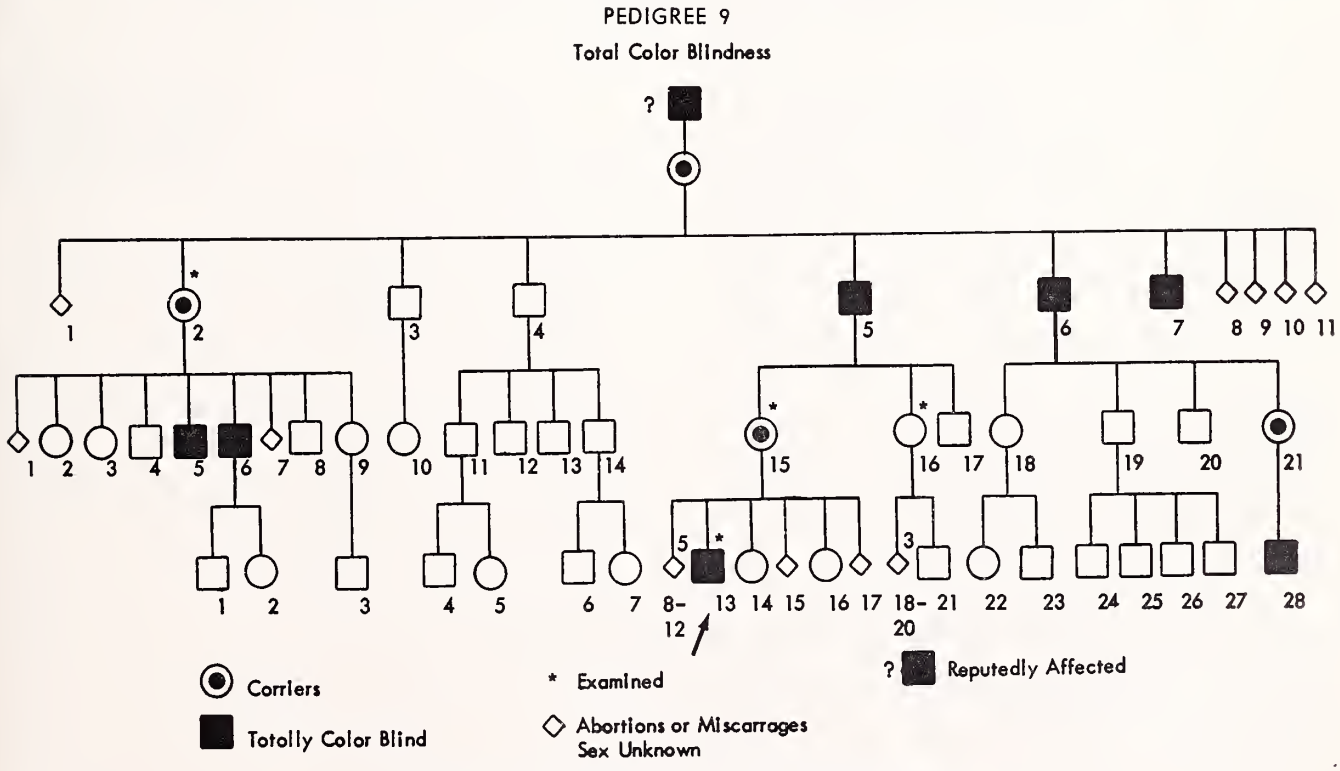
In *intermediate sex-linkage,* the gene is either not completely recessive, or incompletely dominant. The inheritance is in essence like that of recessively sex-linked traits. In this instance the female evidences a carrier state as in choroideremia, one of the abiotrophic fundus lesions.

In recessive sex-linked conditions, affected females are rare. Only one or two (supposedly homozygous) hemophiliac females have been described. Conceivably, the patient could have Turner's syndrome with only one X chromosome, but this has not been reported. Also, the patient could be a male pseudohermaphrodite. This is known to have occurred. Since colorblindness is much more common than hemophilia, a marriage between a carrier female and an affected male is seen occasionally, and results in a colorblind female.

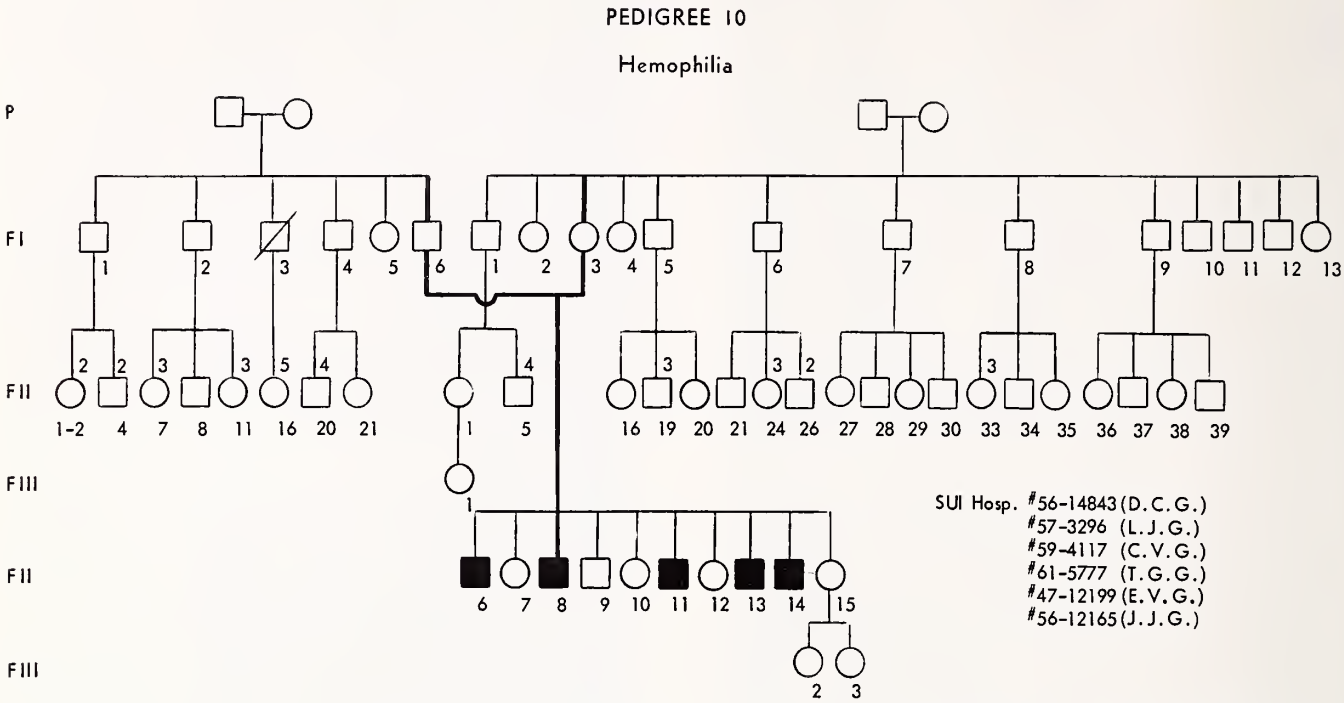
A condition in which the mutant gene is situated on the heterologous segment of the Y chromosome should be easy to recognize, since the condition occurs in males only and never enters the female line *(holandric inheritance).* An extensive pedigree of webbing of the toes exists, and the trait appears to be inherited in this fashion. Yet, some criticism has been directed at some of the more classical examples of holandric inheritance (Stern).

Partial Sex-linkage. Mutations affecting genes of the homologous *(pairing)* segments of the sex chromosomes may occur. There is a possibility of crossing over between these segments of the X and Y chromosomes; furthermore, the conditions may again be dominant and recessive, making these pedigrees difficult to analyze and to differentiate from autosomal dominant inheritance.

Finally, it must be remembered that many of the heritable conditions may be transmitted in more than one fashion, i.e., there may be dominant, recessive or sex-linked forms of a certain disease, such as muscular dystrophy. And usually it is possible to predict the course of the illness



Pedigree 9: Sex-linked, recessive total colorblindness.



Pedigree 10: Hemophilia. The mother must be a carrier, but it is impossible to determine whether or not her mother was a carrier, since none of the females of generation FI, other than the mother of this family, are married.

PHENYLALANINE TOLERANCE IN PHENYLKETONURIA

Affected Propositus: 17.2 mg Phenylalanine / 100 ml

	Phenylalanine mg/100 ml	Phenylalanine uM/ml	Tyrosine mg/100 ml	Tyrosine uM/ml	Phenylalanine / Tyrosine Ratio
Mother					
Fasting	2.1	0.13	1.0	0.055	
1 hour	12.5	0.76	1.6	0.088	8.6
2 hours	13.2	0.80	1.8	0.099	
Father					
Fasting	0.5	0.03	2.4	0.132	
1 hour	18.9	1.15	2.1	0.115	9.9
2 hours	15.8	0.96	2.7	0.148	

Values for parents fall in range for heterozygotes.
Done in laboratory of Dr. David Y.-Y. Hsia.
Children's Memorial Hospital, Chicago

Figure 12. Phenylalanine tolerance in phenylketonuria to detect the heterozygous carrier state of the parents.

if one can determine the type of inheritance. It is an established clinical observation that in muscular dystrophy, for example, the recessive form starts earliest, is most severe and leads to early death. The dominant variety is more benign, and the recessively sex-linked type is of intermediate severity. A simple explanation of these differences is provided by the fact that in recessive illnesses two genes act unopposed by a normal allele, whereas in the dominant form there is a normal allele which perhaps opposes and partially mitigates the effects of the mutant gene, and in the sex-linked variety there is no allele of any sort to enhance or inhibit the action of the gene.

Sex limitation should be mentioned briefly if only to differentiate it from sex-linkage, which was discussed above. In almost all cases of sex-limited inheritance, we deal with a dominantly inherited trait the expression of which is limited to one or the other of the two sexes. The most commonly encountered example is that of early baldness with male sex limitation. The heterozygous female will not show the trait, but it will appear in the male. However, even the female shows some thinning of the hair if she is homozygous. There is a difference in expressivity in the male as well, for the homozygous male will be more affected than his more fortunate heterozygous counterpart.

HEREDITY COUNSELING

It will be impossible to define all the principles of heredity counseling in the few remaining lines. I should rather like to share some of the dilemmas and frustrations that those of us who are engaged in that activity have encountered. As with so many other difficult areas in medicine, three words can compass the majority of the problems: fear, ignorance and guilt.

Guilt is felt by all parents who have brought forth a deformed child. "Did we do something wrong?" is the anguished question that they ask of the physician. We should caution the overly sympathetic doctor who hastens to reassure the parents without first attempting to obtain a history relevant to the etiology of the malformation(s) under discussion. If the physician will provide thoughtful answers to the parents' questions, he can give tremendous relief to them, and the ensuing discussion occasionally will reveal the pathogenesis.

In dealing with single or multiple malformations, it is just as unwise to assure the parents that the anomaly will not be repeated as it is to caution them against having more children. For most non-hereditary congenital malformations, a recurrence risk of four per cent is quoted (Neel). That is, the parents have 96 chances out of 100 of *not* producing another affected child. On the other hand, it must be remembered that malformations may frequently be inherited in an apparently recessive fashion. Thus, if the second deformed child is produced, it is wise to inform the parents of the chance that the trait could be recessive and that the risk of producing yet another malformed child is now 25 per cent for each conception. The physician must keep statistical probabilities in the back of his mind, for he does occasionally encounter the tragic situation in which the majority of children are affected, rather than the expected number.

If the counselor recognizes a dominant condition, he will have a fairly easy time explaining inheritance. Sex-linked recessive inheritance is seen most frequently in colorblindness—a harmless nuisance—and in hemophilia and Christmas disease—two crippling and potentially fatal illnesses. When one of the latter has been identified, the physician is perfectly justified in pointing out the risk to the parents, but he is wise not to "sell" any reproduction policy too vigorously, for the parents may live to regret deciding to interrupt further conceptions. Every physician should be aware of the tremendous emotional, moral and social aspects of these questions. We have found that a person's reproductive behavior is almost impossible to modify in adult years. Most of the decisions about child bearing are settled within the family, and are very little influenced by a physician's urging.

A counselor should be aware of the peculiar social stigma attached to hereditary disease. Frequently a family is ostracized from a neighborhood for having children with extra fingers and toes. Discretion is therefore one of the greatest virtues a hereditary counselor can bring to bear upon the circumstances at hand, together with factual knowledge (including familiarity with the sources where further information can be secured), patience, empathy and the ability to explain the given situation simply and clearly.

In this manner we fulfill the important task of allowing parents to share in and arrive at a responsible decision. It is also of great importance that the counselor keep accurate records of the exact details of the case, plus the essence of his discussion with the couple and the advice he gave them, because of the medical-legal potentials inherent in many of these cases. If the case is too difficult for him to handle locally, it may be the better part of valor for him to refer it to the nearest medical geneticist or heredity counselor.

We do not have a heredity clinic in Iowa, as yet. At the present time there is even a total failure to instruct our S.U.I. medical students in the elements of genetics. I submit that an annual postgraduate conference on medical genetics should be created at S.U.I., to operate until the time when we have a heredity clinic in the state to which physicians may refer cases. It would also be advisable to arrange for the publication of a yearbook of medical genetics, to serve as an up-

to-date source of information on the latest advances in this rapidly developing field, for all of us who lack time for detailed and diverse reading.

ACKNOWLEDGEMENTS

I am extremely grateful to Dr. B. Spivey, of the S.U.I. Department of Ophthalmology, for his permission to use the heretofore unpublished pedigree No. 9 as an illustration of sex-linked recessive inheritance.

I also thank Dr. Michael Bonfiglio, of the Department of Orthopedics, for permitting me to use the similarly unpublished pedigree No. 4 of Fanconi disease as an illustration of apparent variable dominance, as well as pedigree No. 5 and figures 2, 3A, B and C, and 4 derived from the teaching files of his department.

My thanks also go to Dr. W. W. McCrory for permitting me to use the pediatric cases to illustrate this review, to Dr. R. G. Carney for permitting me to use figures 5 and 6, to Dr. S. J. Fomon for permitting me to use data contained in figures 8 and 12, and the Hospital Administration for letting me reproduce the patient material.

Above all, we owe thanks to the physicians of Iowa, who sent to this hospital all of the cases that have been used to illustrate this review.

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Globulin-Modified Measles-Virus Vaccine

Gamma globulin has been found to reduce unfavorable reactions to live attenuated measles-virus vaccine, according to an article by Fred R. McCrumb, Jr., M.D., of Baltimore, and six associates in the June issue of the AMERICAN JOURNAL OF DISEASES OF CHILDREN.* The authors say that their discovery has paved the way for large-scale measles immunization programs. Earlier studies had indicated that the measles vaccine was effective, but caused fever and rash in some individuals.

In their study, each of 158 susceptible school children in St. Joseph, Missouri, was given an intramuscular injection of measles vaccine and, three to five days later, an intramuscular injection of gamma globulin. Of the 158 children, 143 were successfully immunized by this method without an appreciable number of clinically significant reactions, they reported. Only four per cent had fever in excess of 103°F., and nine per cent had abnormal temperatures lasting for three or more days. Rash was observed in from four to 17 per cent of the children immunized by the combined method. Constitutional symptoms and mild respiratory manifestations of measles-vaccine infection were limited to the few children who experienced febrile reactions in excess of 103°F.

The authors also said that the vaccine modified by gamma globulin proved to be as potent an immunizer as the vaccine given by injection without globulin.

* McCrumb, F. R., Jr., and others: Studies with live attenuated measles-virus vaccine. AM. J. DIS. CHILD., **101**:689-700, (June) 1961.

The Annual Meeting of the
IOWA MEDICAL SOCIETY
will be held at
Veterans Memorial Auditorium
Des Moines
May 13-16, 1962
Please mark you calendar

Nutritional Management of Infants and Children

ROBERT L. JACKSON, M.D.
COLUMBIA, MISSOURI

KNOWLEDGE HAS INCREASED rapidly in the present century, requiring many changes in the methods of nutritional management of infants and children. We have learned that the condition of the mother during pregnancy affects the health and welfare of her baby and that infants are not "born equal" insofar as the storage of nutrients is concerned.[1] Artificial feeding of infants has become so easy and successful that the importance of breast feeding is being underestimated and needs to be restressed. Foods other than human milk or suitably modified cow's milk have been added to the infant's diet closer and closer to the time of birth in order to meet known nutritional needs. In general, increased nutritional knowledge is receiving greater application in the feeding of infants than in the feeding of older children.

Studies of diets of pregnant women show that the poorest dietary habits are found among the very poor and the very rich. In addition, the large group in between those two categories could be better fed than they are, as regards protein, calcium, vitamin D and probably the B group of vitamins.[2, 3] Vitamin preparations frequently are provided in excess as pharmaceutical products. The same money spent for meat and milk would make the diet more nearly adequate in all known essentials. Particularly the substitution of calcium salts for milk in the mother's diet—a procedure that some doctors mistakenly regard as justifiable—deprives her of excellent protein, vitamin A, riboflavin and some thiamine, all at considerable expense to her.

The incidence of prematurity has been shown to rise sharply with decreasing maternal nutritional status. In a group of 404 pregnant women of low income living in rural Iowa, it was observed that the infants born to the most poorly nourished mothers had the lowest birth weights, the lowest vitality and the highest mortality.[4] Burke, Harding and Stuart[2] observed that the birth size of the infant, as regards both weight and length, tended to parallel the protein intake of the mother during the last six months of pregnancy. In the Iowa study, the protein intake also was found to be an excellent indicator of the adequacy of the diet in general. The number of pregnancies and the rapidity of their succession also were found to be important, since maternal nutritional reserves tend to become exhausted unless the mother is receiving excellent care, including an optimal diet during and between pregnancies.

THE PREMATURELY BORN AND IMMATURE INFANT

Nearly half of the protein and calcium of the newborn infant is deposited during the last four weeks of normal gestation. Although human milk is admirably adapted for the full-term baby, it will be impossible for the prematurely-born infant to "catch up" if it is fed only human milk. It is therefore desirable to add dry skimmed milk or calcium caseinate to human milk, or to use a modified cow's milk formula. A formula with a low fat content is preferable, for fat is tolerated poorly by immature or sick infants.

Because of the susceptibility of the prematurely-born infant to rickets, it has been the practice of most physicians to give large amounts of vitamin D. Studies show, however, that the prematurely-born baby requires no more vitamin D than does the baby born at term.[5] Increased vitamin D does not compensate for the low mineral intake. The chief reasons why the prematurely-born baby is susceptible to rickets are that the calcium and phosphorus contents of the body are low at birth, and that there is frequently a failure to supply sufficient amounts of those minerals after birth.

The prematurely-born infant is particularly prone to rapid changes in water metabolism, and becomes dehydrated or edematous far more quickly than the full-term infant. The kidney of the premature infant is incompletely developed and cannot concentrate urine, and thus the water requirement is relatively high. The total amount of fluid needed in 24 hours is approximately 150 ml. per kilogram.

The prematurely-born baby's enzyme systems are incomplete. Oxidation of carbohydrates may not proceed to carbon dioxide and water, but may stop with the formation of organic acids such as lactic and pyruvic. Certain of the amino acids, particularly phenylalanine, are metabolized with difficulty by prematurely-born infants. It has been found that the addition to the diet of larger amounts of vitamin C (50 mg.) aids in the metabolism of the amino acids.[6]

Before becoming head of the Department of Pediatrics at the University of Missouri School of Medicine, a few years ago, Dr. Jackson was a member of the faculty of the S.U.I. College of Medicine. He made this presentation at the annual scientific session of the Iowa Chapter of the American Academy of General Practice, in Des Moines last September.

BREAST FEEDING

Despite all knowledge of infant nutrition and the current refinements of artificial feeding, feeding at the breast of the mother continues to offer definite advantages both to the mother and to her infant.

Many influences have crept into modern living to sway the mother from breast feeding her child. Some mothers have accepted the common practice of artificial feeding as more convenient and better adapted to their way of living. Many others do not understand the advantages of breast feeding and have never heard them explained. More frequently than is recognized, the father is the strong advocate of artificial feeding—for many unsound reasons. Breast feeding cannot be done by the unstable or selfish mother, or without the active support of the husband and the doctor. Parents cannot learn too soon that they must give of themselves to provide for the emotional growth of their child.

The social trend toward hospitalization for childbirth has moved amazingly fast in this country. Hospitalization for childbirth has been accompanied by a substantial decline in breast feeding. In many hospitals, crowded conditions and lack of trained personnel make the possibility of the introduction and spread of infection in the newborn nursery a constant danger. Both the fear of infection and the convenience of the hospital personnel have made present-day nurseries overmechanized, and the whole procedure has become artificial.

Breast feeding on a self-demand basis is the ideal arrangement. A hospital procedure such as "rooming-in" promotes natural, happy relationships, fosters maternal nursing, and gives the father a chance to enter the family circle at an earlier time and to become acquainted with the baby quite promptly. Too frequently, depersonalized and mechanized hospitals make the parents feel acutely that the institution exists for the sake of its personnel and procedures, rather than for the care of the mother and baby. It is a deplorable commentary that infection, morbidity and shortage of hospital personnel, rather than common sense, are responsible for permitting babies to be with their mothers.

Preparation of the mother for nursing her baby must start under the direction of her physician early in her pregnancy. The prospective mother must be educated to understand the importance of breast feeding. Yet, in advising breast feeding, the doctor must exercise care so as not to make his point so forcibly that the mother will feel inadequate or blameworthy if it develops that she cannot nurse her baby.

ARTIFICIAL FEEDING

When an infant is deprived of human milk, cow's milk can easily be modified to meet the infant's nutritional needs by heating, diluting and adding sugar. The amount of cow's milk given the young infant should approximate 1.5 to 2.0 ounces for each pound of theoretical body weight. Two parts of fresh milk should be diluted with about one part of water, and the amount of carbohydrates added should approximate 5 to 6 per cent of the total volume of formula. Monosaccharides and disaccharides, as well as dextrine, are tolerated, but starches cannot be digested by young infants.

Evaporated milk fortified with vitamin D has long been one of the least expensive and widely used foods for artificial feeding. Its advantages are well known and need no reiteration here. When properly diluted (one part evaporated milk to two parts water) and supplemented with vitamin C, it adequately meets the needs of the normal young infant. Evaporated milk formulas tend to be slightly more laxative than fresh milk formulas, but well within the tolerance of most healthy newborn and very young infants.[7]

A fresh or evaporated milk formula can be rendered more digestible by acidification. Mixtures of this type are of special value in the feeding of infants who regurgitate. To prepare acidified milk, approximately six teaspoonfuls of lemon juice are sufficient for each quart.

The most common error in infant feeding is the use of over-concentrated evaporated milk formulas. It is wise to remember that it requires 1.2 ounces of water to 1 ounce of evaporated milk to make a dilution equivalent to whole milk. Darrow, Cooke and Segar's recent report[8] clearly shows the importance, especially during hot weather, of adequate dilution of cow's milk formulas, and the advantage of adding small quantities of carbohydrate to cow's milk preparations.

We have found the more expensive proprietary milk preparations with a lower protein and electrolyte content than the usual cow's milk formula to be useful in the management of infants with special problems. For example, lower electrolyte intake is desirable for the feeding of infants with cardiac decompensation or impaired renal function. It also is possible to increase the protein content by adding casein, thus preparing a high-protein, low-electrolyte feeding.

SUPPLEMENTS

Milk from a healthy mother who has had a good diet meets all the nutritional needs of her infant in the early months of life, with the possible exception of vitamin D. The various relationships of the components of human milk, including the calcium-to-phosphorus ratio, are such that calcium and phosphorus are more efficiently utilized from human than from cow's milk. Rickets is less common among breast-fed than among artificially-fed babies. Nevertheless, breast-fed babies sometimes develop rickets, and the calcium and phosphorus retention of babies receiving human milk is increased when vitamin D is given. The vitamin D requirement of the breast-fed baby is not ac-

curately known, but it is common practice to advocate 400 units of vitamin D daily. During the early weeks after birth, I prefer to give the baby a concentrated vitamin D preparation that can be administered as drops into the baby's mouth. The mother must be cautioned to use only the number of drops prescribed, for mothers have a tendency to believe that if a little is good, more will be better.

The infant fed human milk does not need added vitamin C so early as does the artificially-fed infant, provided that the mother's diet has a liberal supply of vitamin C. However, vitamin C is a harmless safeguard for the breast-fed infant, and it is good pediatric practice to give the infant small supplements of orange juice, beginning in the early months after birth.

Too often, the administration of vitamin D and, in the case of artificially-fed babies, of vitamin C is delayed even into the second month. When the vitamins are started, the amount of vitamin D is often too great, and the amount of vitamin C too small. Maximum calcium and phosphorus retentions are obtained with 300 to 400 units of vitamin D daily. Not only are retentions no greater with any larger amount, but the use of 1,800 units or more daily for several months decreases appetite and, as a consequence, reduces the total retentions of calcium and phosphorus, and slows linear growth.[9] Vitamins C and D should be started with the introduction of artificial feeding. The infant or child taking daily a can of evaporated milk or a quart of fresh milk fortified with 400 units of vitamin D is receiving his requirement of vitamin D. One to two ounces of orange juice (15-30 mg. of vitamin C) provides sufficient ascorbic acid for infants to three months of age.

Overdosage with fat-soluble vitamins A and D can and does occur, and should be avoided. The toxic level of vitamin A is not known, but it is much higher than that of vitamin D. Nevertheless, acute toxicity has occurred from overdoses of vitamin A. Amounts of vitamin A equivalent to five times the recommended vitamin D dosage may be added to the vitamin A content of the feeding with impunity, as far as the effect on growth, development or appetite of the infant is concerned. Recent studies at the State University of Iowa show that 750 units of vitamin A is sufficient to permit normal growth; 1,500 units of vitamin A produces serum vitamin A levels of more than 40 micrograms per 100 milliliters; and no higher serum levels are obtained with dosages of more than 5,000 units of vitamin A.[10]

Recently, there has been a shift from a preoccupation with vitamin nutrients to a more realistic appraisal of the importance of the quality of proteins, fats and carbohydrates. The prevalence of protein malnutrition, especially among young children in developing areas of the world, has resulted in extensive research to develop combinations of cereal grains with other foods that increase the quantity and improve the quality of protein and other essential nutrients.

The requirement of the full-term infant for calories, protein, calcium and phosphorus, sodium, potassium, water, riboflavin and vitamin A will be met when the breast-fed infant receives 2.0 to 2.5 ounces of milk per pound, and when the infant who is fed cow's milk gets 1.5 to 2.0 ounces per pound of body weight of milk containing 6 to 8 per cent of added carbohydrate. The requirements for thiamine and niacin are probably met. Additions of foods containing iron and thiamine are desirable by three months of age, or soon thereafter.

IRON

Hypochromic anemia continues to occur commonly in the latter half of the first year of life. It is desirable to prevent, rather than to treat, hypochromic anemia. The amount of iron storage at birth depends upon the adequacy of the mother's diet, the length of gestation and the watchfulness of the obstetrician to make sure that the umbilical cord is not clamped until pulsations have ceased, so that the baby has received the maximum possible amount of blood.

Iron is stored in the liver of the fetus during the latter half of the third trimester, and the amount is influenced considerably by the nutritional status of the mother. Inasmuch as the amount of iron stored is related directly to the length of gestation, infants born prematurely or immaturely have less iron storage. It has been shown that if the umbilical cord is not clamped until pulsations cease, approximately 100 ml. of additional blood will have entered the infant's body. This amount of blood will make available approximately 45 mg. more iron for storage. This amount of iron may seem insignificant, but it approximates the amount of iron in the diet of many an infant during the first six months of extra-uterine life.

After five or six months of age, the hemoglobin value reflects the dietary regimen and the incidence of infection. Hypochromic anemia commonly occurs in infants receiving excessive amounts of too highly concentrated formulas of cow's milk and insufficient amounts of solid foods. It is wise to begin adding iron-containing foods at the time when the infant reaches his minimum hemoglobin level, and that time is about three months of age. The common iron-containing foods fed to young infants—egg yolk and green vegetables—provide babies. Nevertheless, breast-fed babies sometimes between 1 and 2 mg. daily at most. The sieved meats provide 0.5 to 1.7 mg. to the ounce. Many of the special infant cereals have added iron in amounts providing 2.5 to 4.0 mg. to the serving of one-third ounce.

The infant born at term of a healthy, well-fed mother will maintain a good hemoglobin level at least up to six months of age. If he receives some iron-containing foods daily after the fourth month

of life, probably no other iron supplements will be necessary. An infant receiving only the iron of milk generally shows a slow decrease in hemoglobin level during the latter half of infancy. If his original iron store is poor, an iron deficiency will occur in late infancy. However, in view of the many variables involved in determining the iron available to the infant and the difficulty of evaluating each variable, it seems wise to advocate the addition of 5 mg. of iron daily to the diet of artificially-fed infants whose past history is unknown to the physician.

In a recent study, we found that the ferrous iron permitted significantly higher hemoglobin values in well infants than did ferric iron. It is often stated that iron is not absorbed when given in milk or with meals high in phytates or phosphates. The small amount of ferrous iron used in our study was added to the milk, and satisfactory hemoglobin responses were obtained.[11] Schulman, Smith and Stern[12] have shown in a recent study that there is no advantage in giving iron prophylactically to prematurely-born infants before the third or fourth month after birth. Iron after the third or fourth month becomes very essential, however, and is well utilized.

THIAMINE

The thiamine content of human milk varies widely, being dependent upon the mother's diet. The average value is low: 0.13 mg. to the quart. Cow's milk contains 0.38 mg. to the quart, but that thiamine is partially destroyed by heating, so that the infant fed a diluted milk formula may get little more than does the breast-fed infant. The minimum requirement is considered to be 0.24 mg. per 1,000 calories, and thus the average thiamine intake must be regarded as no more than barely adequate. It seems desirable, therefore, that the earliest-fed supplementary foods be those contributing thiamine as well as iron to the infant's diet. An imbalance or relative deficiency of essential nutrients, rather than an improper percentage distribution of protein, fat and carbohydrate, no doubt accounted for the failure of many babies to thrive during the early part of this century, when cow's milk was modified on a trial-and-error basis for infant feeding.

SOLID FOODS

Solid foods should be offered to the infant after the third or fourth month following birth. Earlier introduction has become popular in the last few years, but serves no useful purpose and may be harmful by conditioning the infant against taking solid foods later when they are necessary to meet known nutritional needs. Egg yolk in the form of a soft custard provides a suitable preparation for the infant's first solid food. Sieved meats especially prepared for babies can be substituted for the egg yolk if there is a definite family history of allergy. There is an advantage in giving sieved vegetables and fruits early to provide variety in flavor and texture. The most important advice to give the mother is that the baby will probably show little desire for the new foods the first few times they are offered.

Although nutritional knowledge has increased rapidly, there is evidence that present knowledge is incomplete. Varieties of fruits, vegetables and meats would seem to offer better opportunities for mixing the assortment of food sources than do the more limited varieties of cereals used in infant feeding. Cereal feedings should not be large, nor should they be offered more than once a day.

As the baby becomes older, it is desirable gradually to offer the solid foods in a coarser form. At approximately five months of age, the baby should also be offered some of his milk from a small glass or cup, and weaning should then proceed gradually over a long period of time. The continuance of bottle feeding after the first year is not good feeding practice under ordinary circumstances.

One of the most common problems for which older infants and children are brought to the pediatrician is anorexia. This symptom usually is dependent upon faulty training in feeding habits during infancy. The inter-relationships which are set up between the mother and child during the early days and weeks of life set a pattern which is important for the later development of the child. The mother who nurses her baby establishes an intimacy with her child that makes future relationships with him easy and natural. This is one of the major advantages of breast feeding, and it has recently been stressed by many authorities. Too often a definite volume of food is prescribed by the physician, and the conscientious and solicitous parents endeavor to give that exact quantity at each feeding, regardless of possible variations in the infant's appetite. Rebellion against food most frequently has its beginning in this manner.

Self-demand feeding schedules have been advocated to overcome this difficulty, but common sense is required of parents in the use of such a schedule, for too frequently the baby is fed every time he cries, and that practice again leads to faulty feeding habits. In other words, either extreme—too rigid a schedule, or no schedule at all—can easily lead to difficulties.

The emotional health of the parents, to a great extent, determines the likelihood of a feeding problem in the infant or child. There is no simple or uniform manner in which to avoid these difficulties. The physician's responsibility in the proper feeding of infants and children includes treatment of the parents. It is for this reason that one encounters a healthy infant who is not thriving on a nutritionally adequate diet, despite many minor alterations in it by the conscientious physician. The problem is not the infant's tolerance of the formula, but the parents' failure of adjustment to the task of taking care of their baby.

FEEDING OF CHILDREN

The nutritional management of infants has received much greater attention from doctors and parents than has the nutritional management of children who have progressed beyond infancy.

Within the American family, the infant occupies a favored position nutritionally because of better public education and closer medical supervision. During the preschool years, the nutritional status of children often deteriorates as they begin to feed themselves at the family table. In general, the nutritional status of grade-school children improves because of school lunch programs and nutritional education. If he is taught health properly at school, the child may favorably influence the dietary habits of his home.

The adolescent boy has a voracious appetite, and usually eats an adequate diet including a high intake of milk. However, the adolescent girl in our present culture is especially vulnerable to poor dietary habits because of the desire for slenderness and the compulsion to be an accepted member of her group. She often refuses to eat nutritious foods at home, and overindulges in snacks at the gathering places of her group. Frequently, she eliminates milk from her diet because it is considered to be fattening. The adolescent girl can best be approached from the standpoint of popularity and beauty, and should not be offered nutritional advice as such. A well-balanced diet may be acceptable to her if the physician prescribes it as a means of improving her figure and remedying her acne, but not if her parents urge it as a means of guarding her health.

Without vitamin D, children vary widely in their ability to use calcium and phosphorus. From 300 to 400 units of vitamin D daily will produce adequate retention of these minerals. Except for therapeutic purposes and to supply vitamin D, no known need exists for special vitamin preparations in the feeding of healthy children. The same money spent for milk and meat would make the diet more nearly adequate.

Without milk, calcium is likely to be deficient, since other essential minerals are more likely to be present in most diets. Milk, however, should not be considered solely as a source of calcium, for it contributes most importantly to the requirement of protein as well as other essentials. During the period when the calcium requirement is less, the requirement for protein is more. Therefore, it is advisable to give 1 to 1½ pints of milk after the period of infancy to the age of approximately 10 years, and about a quart during the period of the pre-pubescent spurt.

Protein deficiency is much more common than is generally appreciated. The height and weight of the child is not a criterion for judging protein metabolism. Without milk and meat in the diet, the protein requirement of the child cannot be met easily, unless special and expert supervision is given. A quart of milk daily supplies most of the protein needs of the young child and half of the needs of the youngster at the beginning of adolescence.

One of the criteria which may be used for estimating the protein content of the body is the creatinine output in the urine. Creatinine excretion is directly proportional to the amount of muscle in the body. When children are fed ample protein, the creatinine excretion rises to a constant level for each child, with a narrow range at each age period for a group of children.[13] Creatinine data collected from the literature, as well as data from our studies at the State University of Iowa, show that the great majority of children from lower socio-economic groups have creatinine values below the theoretically normal curve when they first come under observation. In all the instances in which observations have been made, the creatinine output increases promptly to the normal level when liberal amounts of protein are fed.

There is considerable evidence that nutrition, especially during childhood, is an important factor in the genesis and severity of rheumatic fever.[14] Nutritional studies do not consistently show a deficiency in any single component of the diet. However, the diets are inadequate in a number of essential elements. Although no component of the diet consistently has been shown to be deficient, all of the major studies show a low or marginal protein intake.

Meat and eggs are good sources of the B group of vitamins. A child who drinks his allowance of milk receives most, if not all, of his requirement of riboflavin. Consequently, if the child is receiving a good intake of protein from milk, meat and eggs, the likelihood of his having a deficiency of the B group of vitamins is negligible.

Vitamin B preparations are used commonly for their effects on appetite. Anorexia in children is a common symptom for which medical advice is sought. Correcting the environment and faulty feeding habits usually is the answer to the problem, rather than prescribing vitamin B.

Deficiencies in the diet frequently arise because sugar in the form of candy, soft drinks, other confectionary foods and refined cereal products have replaced nutritionally valuable foods in the diet. Replacing candy and soft drink machines with dispensers of protective food and milk would greatly improve the nutritional status of children. Furthermore, the bad example of selling confectionary foods, especially in schools, to finance various activities should be discouraged.

Supplements in the treatment of acute illness. There is considerable evidence that nutrition, especially during childhood, is an important factor in the genesis and severity of many conditions requiring hospital care. Proper use of electrolyte and sugar solutions as part of the treatment of young

children with acute infections will prevent ketosis and dehydration, which are the common complications for which hospital care becomes necessary. Many physicians have the mother prepare electrolyte solutions for oral use from table salt (sodium chloride), baking soda (sodium bicarbonate) and sweetened fruit juices. Solutions made from these salts should not be highly concentrated. It is advisable to use about a quarter teaspoon of salt and a quarter teaspoon of soda to about a quart of liquid. Sugars in concentrations of about 5 to 10 per cent are useful in helping prevent ketosis. Offering small amounts of skimmed milk, alternated with diluted, sweetened fruit juices, at frequent intervals is an excellent means of providing essential electrolytes and sugar, as well as high quality protein and other essential nutrients. Commercially prepared mixtures of salts and carbohydrates containing known amounts of electrolytes also are available. Most of these preparations, dissolved in a quart of water, make a solution containing about 25 mEq./L. of sodium, 25 mEq./L. of potassium, 30 mEq./L. of chloride and 7 per cent carbohydrate.

Repeated emphasis should be given to the point that properly selected diets are the primary basis for good nutrition and for the treatment of dietary inadequacies. Supplements are useful but need close medical supervision. By continued research, we are rapidly learning how to provide more and better foods. Let us hope that we shall also learn how properly to use and share these foods for healthier, more creative living over a longer span of years.

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The Treatment of Scoliosis

J. H. KELLEY, M.D., and D. N. GIBSON, M.D.
DES MOINES

THE JUNE, 1958, issue of the JOURNAL OF BONE AND JOINT SURGERY was largely devoted to the treatment of scoliosis. Primary emphasis was placed on idiopathic scoliosis and paralytic poliomyelitis scoliosis. In view of the disagreement which has persisted among orthopaedists regarding this subject, it was remarkable how much unanimity was shown about the treatment of scoliosis. Most importantly, it was the feeling of the authors of articles in that issue that spinal fusion is the only way to reduce a curve permanently, and the surest way to prevent progressive curves from increasing.

Actually, not all spinal curvatures progress, or are they all deforming. Many patients with scoliosis —particularly those with double curves and lumbar curves—do not have unsightly postures. We are concerned with those curves that are progressing to such an extent as to deform the patient.[5]

Disappointment with the results obtained from the use of casts, braces and exercises[1] has stimulated clinical and experimental investigation. It is probably true that exercises of any sort will not reduce a curve permanently or prevent it from progressing. It is also a fact that no known brace or cast will reduce a curve permanently. Cobb[2] has said that except through using the Milwaukee brace and the Risser jacket,[7] it is impossible to keep an idiopathic curve from progressing in an ambulatory patient by means of external support. The Milwaukee brace[1] and the Risser jacket are cumbersome appliances which require close super-

vision and are usually employed only for short periods of time, even by their innovators. For example, they may be used during the last few months of spinal growth, to prevent progression of a curve (Figures 1 and 2).

In 1914, Hibbs applied his technic of spinal fusion to a case of scoliosis. Later, during the 1920's, preoperative correction by means of a turnbuckle jacket was introduced, and in recent years some improved technics of fusion and the localizer jacket[6, 7] have gained favor.

Dorsal and dorsal-lumbar curves are the most deforming of the common ones. Fortunately, they are more likely to respond satisfactorily to spinal fusion because of a decreased incidence of pseudoarthrosis or failure of fusion in the thoracic spine. At least 59 per cent of all dorsal and 33 per cent of dorsal-lumbar idiopathic curves ultimately will be severely deforming.[5] On the other hand, according to Cobb,[2] less than 20 per cent of all spinal curvatures are deforming to a point where spinal fusion needs to be considered. Therefore, when dealing with curvatures involving the rib cage, one must recognize that as a curvature progresses and the vertebrae rotate, an unsightly "hump" appears. If this is progressive or if it is already deforming, spinal fusion should be considered.

In general, fusions are being performed at an earlier age than in the past. The spinal fusion may have some ability to increase in length,[3] although a lordosis deformity must be avoided.

When spinal growth is complete, curves will not increase more than five degrees.[7] We determine the end of spinal growth by observing the iliac apophysis. When the iliac apophysis is completely formed, spinal growth is complete. This occurs at approximately age 14 in girls and at age 16 in boys.

Before fusion, correction of the curve is obtained by means of the Risser localizer jacket[6] or the turnbuckle cast. The localizer jacket employs traction plus local pressure over the apex of the curve to effect correction. Spinal fusion is then performed through a window in the cast. The cast is worn for six to nine months following surgery. The Hibbs fusion, or some modification of it, combined with a facet fusion is favored by most surgeons. This is performed bilaterally. Supplementary bone is recommended by all as a means of insuring an

Figures 1 and 2. Case No. 1, G. H., age 13 yrs. 4 mos. Idiopathic dorsal lumbar curve D-4, L-2 measures 30 degrees. Iliac apophysis nearly completely capped. In the brace, the curve was reduced to 17 degrees. Will wear brace until spinal growth is complete.

adequate fusion mass. Extensive fusion of more than seven to 10 vertebrae requires a two-stage operation.

The average correction obtained is approximately 30 degrees.[7] In some cases the correction is much less or much greater than that average, but the important point to remember is that if one waits too long, the cosmetic results of a 30° correction will be relatively unsatisfactory (Figures 3-6).

Pseudoarthrosis of the spinal fusion, with loss of correction and occasionally progression of the curve, is the main complication that precludes good results from spinal fusion. Unfortunately, this occurs in 10-25 per cent of cases and depends on several factors. It must be recognized early and repaired surgically.

The selection of the proper vertebrae for fusion is most important for good results. In paralytic scoliosis, several vertebrae above and below the curve should be included in the fusion. In idiopathic scoliosis, it is usually sufficient to include only the curve.

The etiology of scoliosis has not been discussed, and the reader is referred to the work of Ponseti,[8] which has given us a fresh approach to this aspect of the problem.

Perhaps our greatest difficulty at present is the handling of rapidly developing paralytic curves in children too young for spinal fusion. D. V. Harrington and his associates at the University of Texas have devised a method of internal splints using metal rods, and it may prove efficient in holding curves until fusion becomes possible.

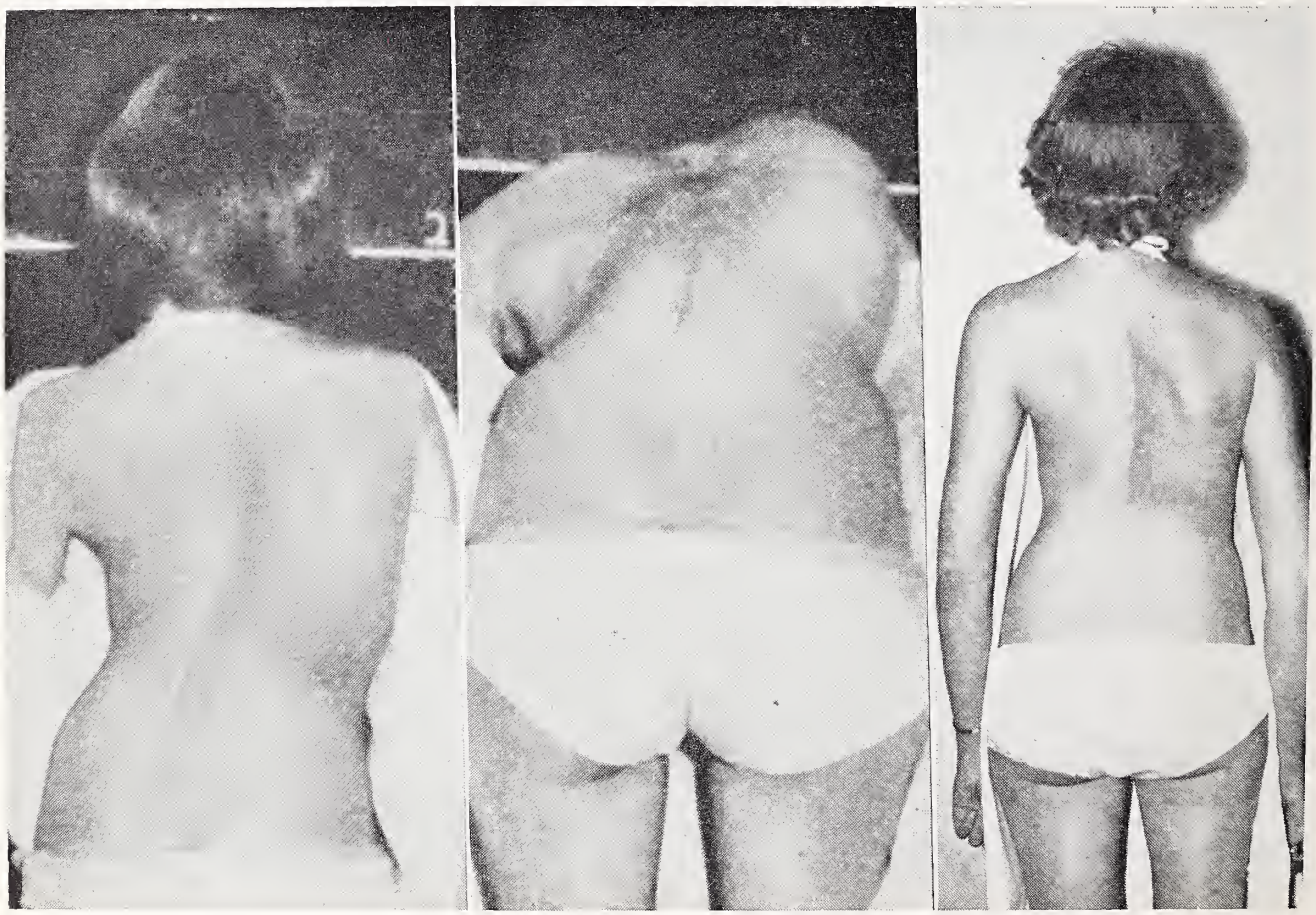
SUMMARY

All spinal curvatures in growing children should be watched closely. Those curves which involve the thoracic vertebrae are particularly apt to be deforming.

When it becomes apparent that a deforming curve is progressing, spinal fusion should be done as early as possible in order to obtain the best possible cosmetic reduction of the scoliosis.

Reliance must not be placed on conventional braces, corsets, exercises or medications, except for the Milwaukee brace and the Risser cast, which may be particularly valuable in preventing progression of a curve during the final months of spinal growth, or in patients deemed too young for fusion.

Dr. John Moe,[6] who has had extensive experi-



Figures 3 and 4 (left and center). Case No. 2, C. W., was first examined at age 14. Idiopathic dorsal curve D-4, D-12 measured 88 degrees. Iliac apophysis one-half capped. Spinal fusion 7-3-'56. Figure 5 (right). Two years after fusion, the curve measured 60 degrees. Fusion solid.

ence with spinal fusion for scoliosis, states: "Correction and fusion of the scoliotic spine is productive of results entirely satisfactory cosmetically and functionally provided that the proper fusion area is selected and the graft becomes solid and mature. Pseudoarthrosis is the prime reason for loss of correction. Most pseudoarthrosis can be discovered, repaired and protected until solid, without appreciable loss of correction."

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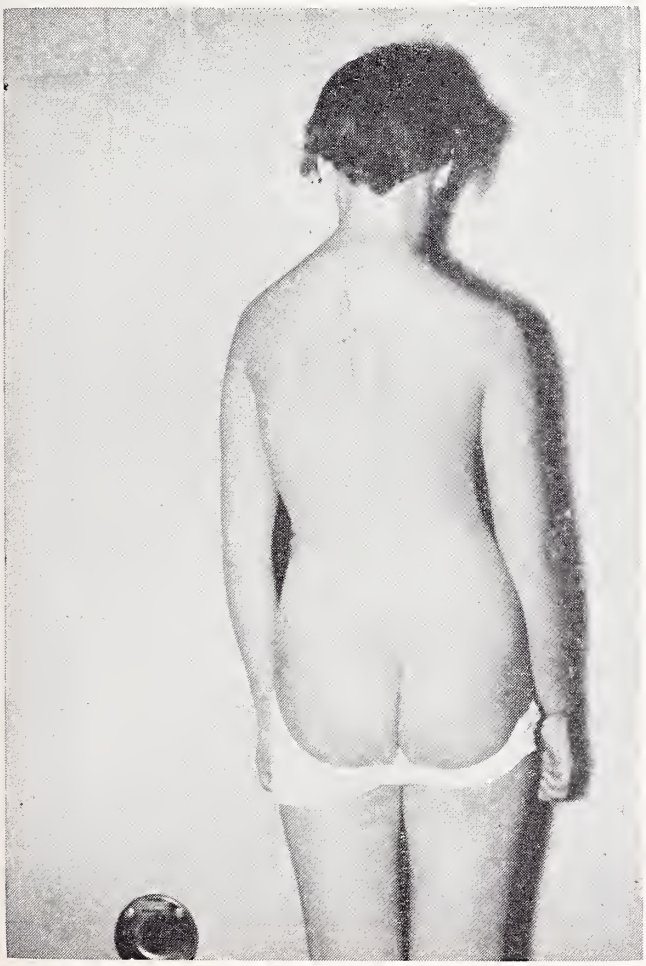
BLUE SHIELD CLAIMS

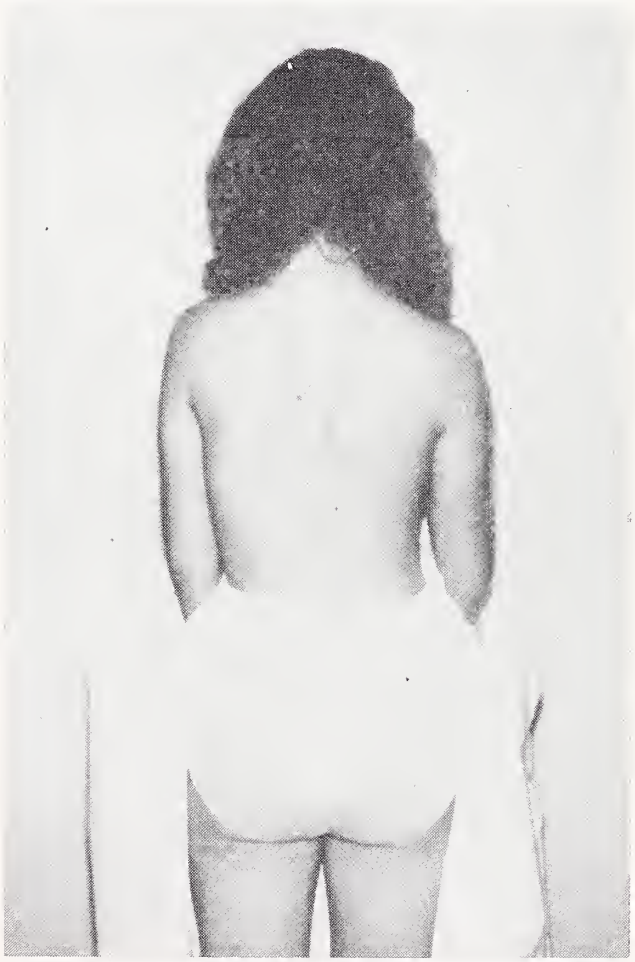
As more and more subscribers transfer from the old "A-250" coverage to the new, more comprehensive "B" series coverage, Blue Shield is having difficulties when two or more physicians have treated a case.

The new "B" contracts provide consultation and concurrent services, and when two or more doctors have attended the patient during the same hospital confinement, by reason of the need for supplemental skills, each of them may submit a claim, if the type of service he has rendered is covered by the contract. For example, an internist and a surgeon may have attended a coronary patient concurrently.

When such a situation has obtained, each physician is asked to list (in the lower one-fourth of the page, on the "Doctor's Service Report") the names of all of the other physicians on the case and the type of service that each of them rendered.

With this cross-reference information, Blue Shield can review the case intelligently, and can speed up its payments.





Figures 6 and 7. Case No. 3, A. D., age 13 yrs. 2 mos. History of non-paralytic polio at age 9. Dorsal curve D-I, D-II measures 55 degrees. Curve progressing; spinal growth incomplete. Two-stage fusion, 3-14-'58 and 3-24-'58. Figure 7. Curve reduced to 30 degrees by solid fusion, 6-30-'60.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 25-YEAR-OLD WHITE WOMAN was first admitted to S.U.I. Hospitals six months prior to her death, with a history of cyanosis since birth. As a child, she had squatted. Recently, increasing shortness of breath had been associated with "darker color." Occasionally, episodes of unconsciousness had occurred during vigorous exercise. She took no cardiac medication, and was discharged without improvement.

Five months prior to her death, an episode of upper-gastrointestinal bleeding occurred which required 11 days of hospitalization. She required no surgical treatment, and no subsequent gastrointestinal bleeding occurred.

Physical examination revealed cyanosis and clubbing of the toes and fingers. The pulse was 80 per minute, and the arm blood pressure was 110/60 mm. Hg. Blood pressure taken in the popliteal region was 115 mm. Hg systolic. The left chest was more prominent than the right. The point of maximum impulse was in the anterior axillary line and sixth intercostal space, with a 2+ palpable right-ventricular overactivity. The pulmonic second was greater than the aortic second sound, and a grade three harsh systolic murmur was heard best along the left sternal border. The abdomen was flat and soft, and contained no palpable masses, solid organs or free fluid. The legs were thin.

Laboratory data included a hemoglobin of 18 Gm./100 ml.; white blood cell count 5,400/cu. mm.; sedimentation rate 0; platelets 300,000/cu. mm.; and hematocrit 68 per cent. An electrocardiogram revealed right ventricular hypertrophy. The chest x-ray and cardiac fluoroscopy were interpreted as showing a 2+ right ventricular hypertrophy and a large shunt without hilar dance. An intravenous angiogram confirmed the clinical diagnosis.

The patient was readmitted four months prior to her death, at which time cardiac catheterization revealed the following: 1. There was low pulmonary-artery pressure with no gradient across the valve, but a change in pressure as the catheter passed into the outflow tract of the right ventricle. 2. There was a left-to-right shunt at the atrial level, with elevated pressure in the right atrium. 3. There was also some peripheral arterial desaturation. 4. The right ventricular pressure was 120/0 mm. Hg.

Open heart surgery was performed four days before her death. The flow of blood through the heart-lung extracorporeal circuit was 60 cc./Kg. She was given 75 mg. of heparin prior to the bypass procedure, and 113 mg. of protamine afterward. There were two pump runs, one of eight minutes and the other of 35 minutes' duration. There was deliberate anoxic arrest of the heart for about 25 minutes during the repair. A short period of ventricular fibrillation was converted to a regular rhythm by means of electric shock. The electroencephalogram showed normal cerebral activity during the entire pump run. The patient was completely awake shortly following the procedure.

On the first postoperative day, vital signs were stable. A chest film showed the lungs completely expanded. The urine was bloody, and the volume was less than 100 cc. during the first 24 hours. The urinary output was 75 cc. during the second day, and the blood pressure ranged between 80/60 and 94/60 mm. Hg. The serum showed no hemolysis. By the third postoperative day, the blood pressure was 110/80 mm. Hg, and the pulse felt full and strong. A bloody plug was coughed out. The patient was thirsty and drank water. The urinary output was increasing.

On the fourth postoperative day, the patient was very dyspneic, short of breath and cyanotic. Moist

TABLE I

	Before Surgery	First Postop. Day	Second Postop. Day a.m.	Second Postop. Day p.m.	Third Postop. Day	Fourth Postop. Day a.m.	Fourth Postop. Day p.m.
Weight (Kg.)	51				51	51	
Urine (cc.)		100	75		500	500	
Na (mEq./L.)			124	124	120	119	
Cl (mEq./L.)				84	82	81	
K (mEq./L.)			6.5	6.5	5.5	6.7	6.9
CO_2 (mEq./L.)			15		15.1		
BUN (mg.%)			87		65	135	
Cr. (mg.%)			5.3		5.1	5.1	

rales were heard throughout. The neck veins were distended. A review of postoperative fluid balance suggested a possible water excess. A gallop cardiac rhythm developed. The blood pressure was 130/90 mm. Hg, and the pulse rate was 140 per minute. The patient was digitalized.

The woman expired while being transferred to the operating room. She had been laughing and talking, but then suddenly sat up, gasped, become cyanotic and died, despite cardiac massage. The heart was in asystole for several minutes, beat strongly for a few minutes, and then gradually dilated, with beats occurring less and less frequently.

SUMMARY OF CLINICAL DISCUSSION

Dr. Richard Sautter, Surgery: Mr. Irish will present the junior students' diagnosis, following which Dr. Noonan will discuss the case.

Mr. Thomas Irish, junior ward clerk: Since I don't intend to cite references during the course of our report, I should mention that we supplemented our own ideas by referring to several massive and authoritative sources, namely Cecil and Loeb's MEDICINE, Levine's CLINICAL HEART DISEASE, Allen, Harkins, Moyer and Rhoads' SURGERY, Cantarow and Trumper's CLINICAL BIOCHEMISTRY, and Dr. DeGowin.

We believe that the initial lesion in this case was a congenital heart defect of the cyanotic group. This, we feel, is fairly well established by the history of cyanosis since birth, of the patient's squatting as a child, of exertional syncope and dyspnea, of clubbing of the fingers and toes and of prominence of the left chest, and by the catheterization findings.

The protocol makes a very brief mention of a bout of upper gastrointestinal bleeding that occurred five months before the patient's death. From the paucity of information supplied, we can only guess at the cause of that hemorrhage. Among the innumerable conditions that can cause upper gastrointestinal bleeding, we suggest two because of their relation to this patient's proved polycythemia. They are, first, hemorrhage into the stomach due to the intense congestion and vascular engorgement known to be present in cases of polycythemia, and second, a bleeding peptic ulcer, a condition which has been demonstrated in increased numbers of polycythemia patients.

We believe that this woman had a significant, secondary polycythemia—significant because of the markedly elevated hematocrit of 68, as compared with the 77 that was the highest value recorded in one extensive series of cases, and secondary because of the increase in the red-blood-cell-related values while the white blood cell count and the platelet count remained essentially normal. Secondary polycythemias, classically, are seen in conditions in which the arterial oxygen saturation is reduced, as it was in this case.

Now we come to the cardiovascular lesion. It is stated that during the catheterization procedure, a left-to-right shunt at the atrial level was found. From that finding, we don't feel that we can escape assuming either an atrial septal defect, or possibly an anomalous return of a pulmonary vein. In view of the increased pressure in the right atrium, and in view of the statistical predominance of the atrial septal defect, we feel most comfortable with that diagnosis. A left-to-right shunt at the ventricular level and an incompetent tricuspid valve might also give such findings, but not in the absence of signs of peripheral venous congestion.

Further findings included a low pulmonary artery pressure, with no gradient across the valve, but a change in pressure as the catheter passed into the ventricular outflow tract. We interpret these as indicating an infundibular pulmonary stenosis. And finally, the right ventricular pressure was 120/0 mm. Hg, and there was peripheral arterial desaturation.

These findings could all be explained by a simple atrial septal defect and pulmonary stenosis, if one were to assume that the shunt at the atrial level was predominantly to the left, as is commonly the case in this combination, and that at the time of catheterization the dynamics of the patient's circulation were such that there was a left-to-right component, or if one were to assume that the atrial defect was so large that considerable mixing of the blood occurred before it passed into the ventricles.

A second group of lesions which could cause the catheterization findings would be an atrial septal defect, pulmonary stenosis and a pulmonary A-V fistula, the A-V fistula being the right-to-left shunt and the cause of the arterial desaturation.

However, for reasons which will be stated, our group prefers a third possibility—a ventricular septal defect in association with an atrial septal defect and infundibular pulmonary stenosis. We feel that this lesion could take many forms, from a simple high septal defect to a virtual absence of the septum, or combined with an overriding aorta to form a tetralogy of Fallot with an associated atrial septal defect—a lesion complex which is common enough to merit a special designation, a "pentalogy."

Our reasons for preferring this diagnosis are several. We feel that a right-to-left shunt must be postulated if we are to account for the arterial desaturation, since the life-long history of cyanosis and the low pulmonary arterial pressure seem to rule against a pulmonary etiology.

A right-to-left shunt at the atrial level seems unrealistic in this patient's case because of the catheterization findings of a shunt in the opposite direction, and the great likelihood of a history of early bouts of congestive heart failure due to the

elevated right atrial pressure that would be necessary to maintain such a shunt.

The placement of this right-to-left shunt at the ventricular level seems most probable for these reasons: the low pulmonary pressure and flow, the characteristics of the murmur, and the absence of x-ray and fluoroscopic findings—an absence that seems to rule against this shunt's being in the pulmonary vessels. The fact that the right ventricular pressure coincided exactly with what one would expect the left ventricular pressure to be suggests a connection between the two. The grade three, harsh systolic murmur heard best at the left sternal border is the murmur that one would expect to hear with a ventricular septal defect. And finally—perhaps most importantly—it is very rare to find an infundibular pulmonary stenosis associated with an intact ventricular septum.

Now we come to the somewhat thornier problem of what happened to the patient postoperatively. Study of the few clinical and laboratory findings obtained during that period shows the patient to have been hyponatremic, hyperkalemic, azotemic, thirsty and hypotensive. This collection of signs and symptoms suggests acute adrenal cortical insufficiency. As possible etiologic factors, we must consider previous steroid or ACTH therapy, though the protocol doesn't suggest it, or hemorrhage into the adrenals due to the anticoagulant that was administered, or possibly due to an overwhelming sepsis (Waterhouse-Friderichsen syndrome), though once again the protocol suggests nothing of the sort, or embolization and infarction of the adrenals, or finally, mere adrenal exhaustion.

On the fourth postoperative day, the patient developed the classical signs of congestive heart failure. The suggested overhydration was probably an important factor, particularly in view of the somewhat paradoxical finding of an elevated blood pressure. The hyperkalemic effect on the heart probably played a part. The polycythemia and sluggish circulation, which we must assume was still present, surely contributed to the congestion, and pulmonary embolism must be included as a possible contributing or precipitating factor. Assuming the heart defect that we have postulated, the left ventricle may have become decompensated or infarcted as a consequence of the increased circulatory load that it was carrying after the repair.

The patient was then digitalized. The only indication of the possible aftermath of that therapy was the information that the patient was then transferred to the operating room in a state of good cheer.

We can only speculate on the purpose of that trip to the operating room—whether for an embolectomy, for control of internal hemorrhage in any of a number of locations and from any of numerous causes, or possibly for emergency cardiac surgery. We feel, however, that the most likely explanation is that the artificial kidney was to be used. That procedure would seem to have been indicated, and we feel that it would have been a good move at that stage.

Her death seems likely to have been the result of an embolic phenomenon. Whether there was a massive pulmonary embolus or a cerebral embolus could be argued, but only inconclusively. The elevated potassium may have been responsible, for a level of 7.0 mEq./L. might be sufficient to stop the heart in diastole. We would need more clinical information, however, before trying to support that possibility.

Although we suggest adrenal insufficiency as a deciding factor in the patient's postoperative course, there are a number of other conditions that could explain the events equally well.

The bloody urine could be explained as the result of renal hemorrhage during the anticoagulant treatment, embolic infarction of the kidney, or hemolysis which could have cleared by the second postoperative day. More simply, it could be accounted for as a consequence of the unusual stress of the operation, or even on the basis of trauma in the handling of the patient in an unconscious state.

The reduced urinary output was probably related to the reduced blood pressure, since the output subsequently increased as the pressure rose.

The abnormal electrolyte values can be explained on the basis of the reduced renal function, coupled with the administration of large amounts of glucose solution, which may have been used in preference to blood in an attempt to raise the blood pressure without aggravating the patient's polycythemia.

The low carbon dioxide value could be explained by increased ventilation from respiratory stimulation due to congestion of the lungs and great vessels. The fact that the creatinine remained virtually unchanged, though elevated throughout the postoperative course, would seem to rule against the development of serious renal disease.

On the third postoperative day, it is said that the patient coughed out a bloody plug. We feel that this was probably the aftermath of a pulmonary embolus and infarction. This condition, if present, would have been an important factor in her persistent hypotension.

The fact that the patient died after digitalization might indicate a breakdown of the cardiac repair, or more probably, the dislodgement of an embolus or a cerebral vascular accident following the increase in vigor of the heart beat.

In summary, then, we feel that the patient suffered from congenital cyanotic heart disease, and that her cardiac lesion consisted of an atrial septal defect, infundibular stenosis of the pulmonary artery, and a ventricular septal defect.

Following surgical repair, we think, the patient suffered from prolonged hypotension, overhydration and adrenal insufficiency. She then suffered congestive heart failure, and died of an embolic phenomenon.

Dr. Jacqueline A. Noonan, Pediatrics: I should like to congratulate the juniors on a very nice discussion.

I suppose that one reason for my being asked to discuss this case is that this woman patient was once a child. In any event, we shall start with the history, and I think that it is one that goes very well with the congenital heart defect which this woman probably did have. She had a history of cyanosis since birth, and she squatted as a child. Squatting is a symptom of congenital heart disease, and is characteristic of one particular lesion —tetralogy of Fallot. We don't know *why* patients with tetralogy squat, but we know that that posture is relatively comfortable for them. We do know that with squatting, the arterial oxygen saturation is raised. There is some difference of opinion as to whether this phenomenon is due to a trapping of blood in the leg veins and a consequent decrease in the amount of unsaturated blood entering the right side of the heart, or whether there is an increase in the systemic resistance following squatting which raises temporarily the left ventricular pressure and decreases the right-to-left shunt. Both of these would increase arterial saturation.

This woman was 25 years of age. It is unusual for a patient with tetralogy of Fallot, who has been cyanotic since birth, still to be in relatively good shape at 25 years of age. From the history, then, this woman had had definite heart disease from birth, and though she was still going pretty strong at 25, she was beginning to fade. That, pretty much, is the history of tetralogy of Fallot. Many of the patients die in early infancy, and those who survive develop difficulties in their late teens or early twenties or thirties. These late troubles consist of increasing shortness of breath and, sometimes, bouts of unconsciousness such as this patient experienced. They may die from the effects of hypoxia, cerebral abscess, other cerebral vascular accidents or congestive failure.

Now this patient had some episodes of unconsciousness that occurred during vigorous exercise. Anoxic spells in infants are different, for they aren't associated with exercise. In the infant group, spasm of the infundibular area is postulated as a cause, but the etiology is not known. Those babies are very difficult to study. They are sick, and we cannot precipitate spells at will. We are unable to duplicate the phenomenon in animal experiments. Thus, we really don't understand these anoxic spells, but those that occur in infancy seem to be different from the spells that this woman had. It would seem that the patient had true bouts of hypoxia due to marked oxygen desaturation following heavy exercise. One might wonder whether her cerebral vessels, or her brain in general, had already been somewhat compromised by many bouts of hypoxia throughout her life.

I don't know what her bout of upper gastrointestinal bleeding was due to. She was in the hospital for 11 days. She did not require any surgical treatment. No subsequent gastrointestinal bleeding occurred. This patient was polycythemic. For some reason, patients who are polycythemic have large veins. The veins tend to be dilated and to bruise easily. I have seen a number of babies with rectal bleeding from large, dilated, hemorrhoidal veins. They also bleed quite easily from the mouth and throat, and sometimes this blood from the throat is interpreted as gastrointestinal bleeding. The bleeding in this woman could have been either lower-esophageal or esophageal-gastric bleeding from dilated veins, and I should be interested in knowing whether upper-gastrointestinal x-ray studies at that time didn't disclose a peptic ulcer. I am not thinking very seriously of esophageal varices. From the physical examination, the patient didn't have any enlargement of the liver or spleen, and had no history to suggest esophageal varices. If no x-ray studies were done, we must conclude that perhaps the history was not very suggestive of ulcer. I would postulate a local erosive phenomenon secondary to large veins that may have been present in the stomach area. In any event, she recovered from that illness, and required no surgical therapy. She wasn't taking any heart medicine.

The physical examination revealed cyanosis and clubbing of the fingers and toes—findings that one might expect in a patient who had been cyanotic since birth. Her blood pressure was normal in her arms and legs. She had some deformity in the left chest, and we would suppose that it was due to some right ventricular enlargement. She had some overactivity of the right ventricle. The protocol states that the pulmonary sound was greater than the aortic sound. I should question this finding, and postulate that perhaps the second heart sound was quite well heard along the left sternal border because of aortic closure due to the overriding aorta, and not pulmonary closure. I should expect her second sound, or at least the pulmonary component of it, to be quite diminished due to the pulmonary stenosis.

There was a grade III harsh systolic murmur heard along the left sternal border. It is the sort of murmur that one would expect in a tetralogy of Fallot. The abdomen was flat, and there is no mention of an enlarged liver or spleen. The legs were quite thin. Do we know anything else about this woman's legs? Did she have good blood vessels? Was the vascular supply good? Did she have, or had she ever had, any phlebitis?

Dr. Sautter: No, she did not.

Dr. Noonan: The laboratory data include a polycythemia, 18 Gm. of hemoglobin and a hematocrit of 68 per cent. This woman had none of the complications that sometimes occur with long-standing polycythemia. She did have a normal platelet count, as far as we know, and although she had gastrointestinal bleeding on one occasion, she had none of the other bleeding disturbances that sometimes follow a long polycythemia. The electrocardiogram revealed right ventricular hypertrophy. I assume that there was nothing unusual about that cardiogram that we need to see. It was simply right ventricular hypertrophy. Cardiac fluoroscopy was interpreted as showing 2+ right ventricular hypertrophy and a large shunt without hilar dance. We aren't told the direction in which the shunt was going, but I suspect that on the basis of fluoroscopy one talks only about a left-to-right shunt, and I would suggest that perhaps that was a misinterpretation of what was really present. An intravenous angiogram was done, and it confirmed the clinical diagnosis that I am assuming was tetralogy of Fallot.

Dr. Carl L. Gillies, Radiology: An angiogram was done. If you'll notice, the dye is seen in the pulmonary artery at about the same time that it is seen in the aorta. Therefore, there was a shunt. The right ventricle was enlarged, and there was also thought to be an overriding aorta with pulmonic stenosis.

Dr. Noonan: The x-ray study seems to confirm the clinical diagnosis of tetralogy of Fallot.

The patient then had cardiac catheterization, and according to the protocol, it showed an infundibular stenosis. However, a left-to-right shunt was reported at the atrial level. As the junior students have mentioned, there is a condition in which an atrial septal defect accompanies the usual findings of tetralogy of Fallot. This is called the pentalogy of Fallot. Now to my knowledge, it is still rather unusual for this group of patients to have a left-to-right shunt at catheterization, but I suppose it is possible. I should like to see the catheterization data so as to find out how significant that shunt was, but I don't think that it is very important in the discussion. There was some elevation in the right atrial pressure, although the right ventricular and diastolic pressures were normal. As the junior students mentioned, the right ventricular pressure was at the systemic level. This would tend to oppose the diagnosis of a pure pulmonary stenosis with an intact ventricular septum and a right-to-left atrial shunt. In a patient who had been cyanotic since birth, I should have expected a considerably higher pressure in her right ventricle than 120 mm. Hg if it were severe pulmonary stenosis without a ventricular defect. Thus, I think that the diagnosis at the time of surgery was either tetralogy or pentalogy of Fallot.

The patient was connected to the extracorporeal circuit, and the flow rate was 60 cc./Kg., which is about 3,060 cc./min. That is a reasonably good flow. It would be a relatively low flow for any considerable length of time, but for a brief period it is considered to be within the limits of safety. She was given the usual doses of heparin during surgery, and protamine following surgery. That is a well-established procedure which has not led to a bleeding tendency in other patients.

There were two pump runs—one of eight and the other of 35 minutes. Perhaps the surgeon will tell us more about what was being done at that time. The patient did have anoxic arrest of the heart, which is also a common procedure during the repair of a complicated lesion such as tetralogy of Fallot. This is usually a long procedure, but in this case the operative time was shorter than it has been in the repair of some of the severe tetralogies. Was the deliberate anoxic arrest of the heart produced with potassium or anoxia?

Dr. Sautter: Anoxia.

Dr. Noonan: This is done by clamping the aorta and shutting off blood to the coronaries until the heart stops. Ventricular fibrillation occurs, and is followed by electric shock to reestablish regular rhythm. This again is quite a usual sequence, and should by no means cause any alarm. The electroencephalogram was observed during this pump run, and showed normal activity. The patient was awake following the procedure. As far as we can tell, everything at surgery went quite well. It was a smooth operative procedure. The patient didn't have some of the usual problems that occur immediately following surgery.

Now we do know that during surgery, when the type of oxygenator that we have here is used, several things can happen. The flow, as we have mentioned, although it is felt to be within pretty safe limits, is a relatively low flow, and since the pump run lasted more than 45 minutes when we got everything tallied up, it is possible that there could have been some renal ischemia during the pump run. There is also the possibility of air embolism in any open-heart surgery that involves opening the left side of the heart. There is also the possibility of "antifoam" itself causing problems. In tetralogy of Fallot, as we have seen in some patients, some of the material that is resected from the infundibular area may escape and actually pass into the circulation and act as an embolus. Thus, there is this possibility for us to consider as we think about the patient's kidney problem. But in any event, as far as the surgeon was concerned, things went well, and the patient was awake following the procedure.

On the first postoperative day, the vital signs were "stable." By *stable,* are we to understand that these signs were at normotensive levels, or was the patient stable at hypotensive levels? Her urine output was low, and it was also bloody. Dur-

ing the second 24 hours, she continued to have a low urinary output. Her blood pressure the second day was still low. Was it higher than on the first day?

Dr. Sautter: Yes. She was stable at hypotensive levels during the first day.

Dr. Noonan: She was in shock the first day, and was improved on the second day. By the third postoperative day, her pressure had risen. In fact, her diastolic pressure had risen to 80 mm. Hg. She was thirsty and drinking, and she coughed up a bloody mucous plug.

Now on the fourth postoperative day, there seems to be no question that the patient developed congestive heart failure. Along with it, she also developed some hypertension. She was digitalized.

Before we get to the last paragraph, perhaps we should discuss the results of the blood chemistry analyses. The fact that the patient had so many analyses makes me think that the people caring for her were concerned about her kidneys. This is not the usual postoperative routine for heart-surgery patients, and it means that the bloody urine was considered quite significant. Now I think that the urine was tea-colored—brown rather than bright red. Something had happened to this woman's kidneys. Now whether ischemia had resulted from relatively poor perfusion during the pump run, or whether all the ischemia occurred immediately following surgery is not clear. Whether there were embolic phenomena to the kidney, we don't know. In fact, we really don't know a whole lot about what happens to some of the vital organs following open-heart perfusion. We do know that there are changes in almost every patient following perfusion. Some of these patients have been studied, and have shown a little albumin and a little hematuria. The platelet count drops a little bit following perfusion. These changes seem to be relatively minor in most cases. They usually don't cause any trouble, and the patients recover. It may be, however, that though these factors are of no consequence when they occur in another patient, they were significant in this one. In any event, this patient's kidneys were not normal following surgery. In addition, the first chemistries obtained showed that this woman had a low sodium, a low chloride and a relatively high potassium. The BUN was elevated, and it continued to rise. I think it is possible that this patient had adrenal insufficiency, but I really doubt that this was true clinically. Did she get any steroids in her therapy?

Dr. Sautter: No.

Dr. Noonan: She seemed to improve as far as her blood pressure was concerned, and was sitting up and laughing, so I think she wasn't in adrenal failure. At least I don't think these chemistries were due to adrenal failure. I would postulate, rather, that they were due to hemodilution. This is something that happens in almost any patient who undergoes heart surgery. There is some hyponatremia following surgery. It is usually less profound, and it is relatively asymptomatic and quite self-limiting, because in the first 24 to 48 hours following surgery, fluids in general are quite restricted. The patient compensates and voids a large amount of urine, and everything gets back to normal. In this particular patient, however, the kidneys weren't working normally, and the usual hyponatremia following surgery wasn't compensated for.

I think that on the pump oxygenator, this patient who had been polycythemic before surgery had additional changes due to the high hematocrit. The studies done on polycythemic patients have been somewhat at variance, but we do know that such individuals have a high red cell volume, a high total blood volume and a relatively low plasma volume. I should think that following perfusion with normal blood—in fact with blood of a lower hemoglobin than this patient had—it might well be that the patient's blood volume was diluted somewhat and her sodium might have been lowered. I don't think that this was an example of the so-called low salt syndrome, for I don't think that the total body sodium was low. I think that this was all due to dilution, and that in itself it looked bad without affecting the patient appreciably.

The potassium was somewhat elevated. That might suggest that there was a fair amount of hemolysis of her red blood cells, which of course is another possibility. It may be that polycythemic blood hemolyzed during perfusion more than normal blood. This patient was being perfused with a large amount of donor blood. There is always the possibility of some unexpected reaction during a mixing of blood, although this hasn't been a common finding in open-heart surgery. Dr. DeGowin can comment on that later, if it was a problem.

In any event, although on the third day the urine output began to rise, the blood chemistries didn't change, and by the fourth day, the physicians taking care of this patient decided that she probably had received too much fluid. This is consistent with the recorded clinical course. The hypertension that developed suggests some overhydration, as does the fact that congestive failure developed. I don't think it is surprising that this patient developed congestive failure, because tetralogy of Fallot is a serious lesion, and quite often the right ventricular pressure doesn't drop to normal immediately after surgery. It is never possible completely to relieve the infundibular stenosis at surgery, although in time it may regress. It isn't unusual for patients who are otherwise doing well and have no kidney problems to develop some congestive failure in the immediate postoperative period. This patient, with her overhydration and hypertension and generally serious state, developed some congestive failure, and I

don't think it was surprising. But this then made things come to a crisis. She was transferred to the operating room. I should like to ask if she were to be put on the artificial kidney.

Dr. Sautter: Yes, for dialysis.

Dr. Noonan: This, I am sure, was thought over carefully, and it was appreciated that there would be some risk in anticoagulating the patient in the immediate postoperative period. Certainly she could still bleed from small vessels in her pleura, since she was a very cyanotic patient who had just undergone heart surgery.

I really don't know what the main reason was for bringing her to the operating room. Her potassium was high, but it should have been possible to control that by medical means. I don't know how serious the congestive failure was, and I would assume that the main reason for dialysis was to decrease her overhydration. In any event, she didn't make it to the artificial kidney, and she died. Hers was not the sort of death that one would expect from hyperkalemia. She was laughing and talking, but then suddenly sat up, gasped, became cyanotic and died. Her heart even beat a little bit after it had been massaged, but then it dilated and she was dead.

I don't know what the cause of death was, but I should suspect that it was one of the things that usually cause sudden death—a pulmonary embolus or perhaps a massive cerebral vascular embolus. Maybe she had had some other emboli to her kidneys during perfusion, and had thromboses elsewhere and then terminal infarction.

Dr. Sautter: Thank you very much.

Our clinical diagnosis was pulmonary edema secondary to water overload, and that was why we were going to dialyze her. As to her kidney lesion, we classed it as acute renal shutdown, but the exact etiology was unknown. It was thought to be ischemic damage, probably temporary. In fact, the urine output was increasing, and the color had returned to normal.

Dr. Frederic W. Stamler, Pathology: The basic malformation of the heart was very much as has been postulated by various participants. There was an interventricular septal defect closed by surgical repair, an atrial defect closed by suture, hypertrophy of the right ventricle, and a repaired infundibular pulmonic stenosis.

The heart was moderately hypertrophied. It weighed 350 Gm., and the hypertrophy involved selectively the right ventricle. One other thing worthy of note concerning the heart was that there was perhaps more necrosis of the cardiac musculature at the site of incision of the ventricle than one might have expected to find. The surgical procedure had entailed an operative incision 5½ cm. in length through the anterior wall of the right ventricle. This had been adequately closed. Several branches of the right coronary artery had been ligated incident to this, and there was fairly extensive necrosis adjacent to the line of incision. This may have been a factor in weakening the action of the heart, particularly with regard to right ventricular function. There was evidence of congestive cardiac failure in that there was generalized visceral congestion, with particularly noticeable congestion of liver and spleen, and with rather extensive central lobular necrosis of the liver. The lungs were also congested and rather edematous. Their weight was a little less than twice normal, and they showed foci of early pneumonia and hemorrhage. There were a number of small hemorrhagic infarcts which were associated with thrombotic occlusion of small peripheral pulmonary vessels. In addition, there was a rather recent fresh thrombotic occlusion of the artery to the left lower lung lobe. I assume that this occlusion probably had occurred in relation to the terminal episode in this patient's course.

There was evidence of acute renal tubular damage which appeared to be in a state of partial recovery. There were pigmented casts in many collecting tubules, and there was evidence of degenerative and necrosing lesions of the convoluted renal tubule. This fits very well with the clinical history of temporary renal shutdown, with partial recovery of function before death. No lesions of the gastrointestinal tract were found to account for the episode of hemorrhage that occurred some months prior to death.

Thus, we have a patient who had been in a rather precarious position as regards cardiac function. She had been in early congestive failure and had experienced several small pulmonary emboli, probably over a period of several days, and finally there was a more massive one occluding the branch artery to the lower left lung lobe. As to the exact source of the embolus, we have no definite clue. I think it likely that it developed as a mural thrombus on one of the operative sites in the heart, and became detached and was carried from that site as an embolus.

Dr. Sautter: Thank you, Dr. Stamler. Try as I would, I couldn't obscure the diagnosis from either Dr. Noonan or the junior class.

Dr. Ehrenhaft, would you care to say a few words about the operative procedure and about the incidence of complications following long pump runs?

Dr. Johann L. Ehrenhaft, Surgery: I was surprised that this patient died following surgery. She appeared to be doing well, and we never expected to lose her.

The question of hemolysis was brought up on several occasions—hemolysis due to the trauma inflicted on the blood during oxygenation and pumping. We have checked the hemolyses in the first 60 patients operated upon with the aid of the pump oxygenator, and have found the hemolysis in the blood negligible, even after prolonged pump runs. Some other surgeons, as well as I,

have noticed that in patients who have tetralogy of Fallot and are severely cyanotic, bloody casts in the urine do appear on the first postoperative day. I haven't seen a renal shutdown on this basis prior to this particular instance. I have discussed the matter with other surgeons doing this type of work, and some of them have theorized that the difficulty may be due to mismatched blood. Thus far in this institution, we have been fortunate in that no gross mismatching of blood has occurred, and I doubt that anything of that sort was the case in this patient.

Many other complications can arise as a result of this type of surgery. They are embolic phenomena—air embolism, conduction defects postoperatively—but none of those things occurred in this patient. There was no evidence of peripheral systemic embolization, and the lesions seen in this patient's lung must have arisen in the right side of the heart and must have been either embolization or local thromboses. I suppose they were emboli that must have arisen along the suture line of the myocardium.

Patients with tetralogy of Fallot at times have abnormal myocardial blood supply, and sometimes the coronary arteries supplying the anterior wall of the right ventricle are more numerous and larger than normal. During right ventriculotomy, some of those coronary vessels are transected, and as in this instance, may produce areas of myocardial infarcation between the myocardial incision and the position of the septum. Usually, this doesn't take place, but in this particular patient this may have been the site of thrombus formation on the endocardium, and the site for the embolus.

Dr. Sautter: The blood was checked postoperatively. All the blood had been infused—both the ACD and the heparinized blood—and there had been no mismatch.

Dr. Elmer L. DeGowin, Internal Medicine: The urine specimen on the second day was reported as bloody. Are we to understand that it was examined miscroscopically and that red cells were obtained, or merely that the urine looked red?

Dr. Sautter: It was examined.

Dr. DeGowin: And there were many blood cells?

Dr. Sautter: No free blood cells. The urine did contain hemoglobin.

Dr. DeGowin: Then this was true hemoglobinuria. The protocol failed to mention that finding.

Dr. Sautter: The omission was intentional.

Dr. DeGowin: What was the reason for preferring the artificial kidney here to a simple phlebotomy in the presence of pulmonary congestion?

Dr. Edward E. Mason, Surgery: I saw the patient for several days, trying to make up my mind whether we would need to use extracorporeal dialysis and watching the patient's progress. Because she had a falling serum sodium and a rather low sodium, and because she was drinking water, was oliguric and had some intravenous fluid, and because she did have pulmonary congestion, I felt that she probably had a water overload.

Now, during the first day she was hypotensive, and it was suggested that perhaps she needed a little greater blood volume. In consequence she was given a unit of plasma, and that seemed to correct her hypotension. I concluded that she needed that increase in blood volume. Her blood pressure stayed up after the plasma had been given, but then she gradually developed pulmonary congestion. I thought the best way to treat it was to remove some of the water by ultrafiltration, rather than to decrease her blood volume. There was a medical consultant, and other people may have other or additional comments about this phase of the treatment.

Dr. DeGowin: Of course we have the advantage of retrospection that the attending physicians lacked. It is important to realize that patients may die very fast from circulatory overload and pulmonary edema. This is a medical emergency and treatment should be instituted as soon as possible. The first choice would be to place tourniquets on all four extremities. If the diagnosis is correct, this maneuver will relieve the dyspnea in two or three minutes, and the rales in the lungs will disappear. A phlebotomy should be done thereafter. Otherwise, a relapse will occur, and death will result some hours after the physician has left the bedside. I don't think the tourniquet is nearly so effective when the hypervolemia has occurred over a relatively long period of time. In the latter case, application of tourniquets is somewhat like closing the stable door after the horse has been stolen.

Dr. Sautter: One of the reasons why we were reluctant to do a phlebotomy was that the patient had been hypotensive, and we didn't try the tourniquets because of her relative hypotension.

Dr. John A. Gius, Surgery: I am interested in the central lobular necrosis of the liver. I wonder how this fits in with the total picture.

Dr. Stamler: We see this degree of central lobular necrosis with simple congestive failure, presumably due mainly to hypoxia or anoxia affecting the liver cells in this area. Similar degrees of necrosis with a similar pattern can be produced by toxic agents such as chloroform. But I don't think we need to postulate anything more than anoxia due to congestive cardiac failure in this case.

Dr. Mason: There was an article a couple of weeks ago* describing a patient who came into the hospital with cardiac failure, patent ductus arteriosus and oliguria. The attending physicians treated her with two runs on the artificial kidney, their thesis being that her kidney function might improve, and she could then develop her own diuresis and be prepared for surgery. This proved

* Lemmon, W. M., Hirose, T., O'Connor, R. A., and Bailey, C. P.: Congestive heart failure—relief by renal dialysis. J.A.M.A., **174**:2124-2128, (Dec. 24) 1960.

true. Finally, she tolerated the surgery satisfactorily, and survived all of this.

That article reported a successful instance of the sort of things we hoped to accomplish with the artificial kidney. In addition, I might call your attention to the fact that we can do a continuous phlebotomy and reinstill the blood into the arterial system, thus reducing the load on the heart by 300 or 400 cc. per minute.

SUMMARY OF NECROPSY FINDINGS

A thrombotic embolus of recent origin was found lodged in the artery to the left lower lung lobe, and multiple small peripheral pulmonary arterial emboli were present, associated with small foci of pulmonary hemorrhage and beginning infarction. Diffuse pulmonary edema and early bronchopneumonia were also present.

The heart was mildly hypertrophied, and displayed the malformation tetralogy of Fallot, with recent surgical repair of infundibular pulmonic stenosis and atrial and ventricular septal defects. The right ventricle was hypertrophied, and there was a moderate amount of myocardial necrosis incident to the operative procedure.

The kidneys showed tubular nephropathy of mild degree, and there was generalized visceral congestion, with centrolobular hepatic necrosis.

Death was caused by pulmonary embolism superimposed upon congestive cardiac failure, with pulmonary edema and early bronchopneumonia.

ANATOMIC DIAGNOSES

Congenital cardiac malformation with tetralogy of Fallot

Status postoperative pulmonary infundibular valvuloplasty and closure of atrial and ventricular septal defects

Pulmonary embolism, left lower lobe, and multiple small peripheral arterial branches

Pulmonary edema with early bronchopneumonia

Visceral congestion, with hepatic centrolobular necrosis

Acute tubular nephropathy, mild.

Coming Meetings

Out of State

July 1-4	**International College of Surgeons, New England Regional Meeting.** Chatham Bars Inn, Chatham, Cape Cod, Mass.
July 2-7	**Annual Conference, American Physical Therapy Association.** The Palmer House, Chicago
July 9-15	**Association of Hospital and Institution Libraries, Division of the American Library Association.** Cleveland Public Auditorium, Cleveland
July 10-11	**Dermatology in Clinical Practice.** University of California at Los Angeles
July 10-13	**External Ophthalmology (Univ. of Colorado Medical Center).** Estes Park, Colorado
July 10-14	**Symposium for General Practitioners on Tuberculosis and Other Pulmonary Diseases (American Thoracic Society, Saranac Lake Medical Society and Adirondack Counties Chapter of the N. Y. State Academy of General Practice).** Saranac Lake, New York
July 12-14	**Conference on Strabismus.** Presbyterian Medical Center, San Francisco
July 12-16	**Advanced Seminars in Dermatology.** University of California, Los Angeles
July 14-15	**Infertility.** University of California, Los Angeles
July 16-19	**Advanced Seminar on Fertility.** University of California, Los Angeles
July 24	**Lederle Symposium.** The Plains Hotel, Cheyenne, Wyoming
July 24-28	**Cardiopulmonary Problems in Children (American College of Chest Physicians).** Brown Palace Hotel, Denver
July 27-29	**Dermatology for the General Practitioner.** University of Colorado Medical Center, Denver
Aug. 2-6	**Postgraduate Course, General Pediatrics, University of California, Los Angeles.** University Conference Center, Lake Arrowhead
Aug. 6-9	**Postgraduate Course, Advanced Seminars in Internal Medicine, UCLA.** University Conference Center, Lake Arrowhead
Aug. 6-17	**Reconstructive Surgery of the Nasal Septum and External Pyramid (Department of Otolaryngology, Mayer de Rothschild, Hadassah University Hospital and the Hebrew University-Hadassah Medical School of Jerusalem, in cooperation with the American Rhinologic Society).** Jerusalem, Israel
Aug. 6-18	**Course in Medical Genetics.** Bar Harbor, Maine
Aug. 7-10	**National Medical Association, Inc.** Commodore Hotel, New York City
Aug. 7-12	**Hepatic Pathology.** University of Colorado Medical Center, Denver
Aug. 21-24	**31st annual meeting of the Biological Photographic Association.** Hotel Knickerbocker, Chicago
Aug. 21-25	**Clinical and Research Advances in Pediatrics and Child Guidance Problems (University of Colorado School of Medicine).** The Stanley Hotel, Estes Park, Colorado
Aug. 26-29	**American Podiatry Association.** Americana Hotel, Miami Beach, Florida
Aug. 27	**American Association of Electromyography and Electrodiagnosis.** Hotel Sheraton-Cleveland, Cleveland, Ohio
Aug. 27-Sept. 1	**American Congress of Physical Medicine and Rehabilitation.** Hotel Sheraton-Cleveland, Cleveland, Ohio

Editorials

PROMPT DISCOVERY IS ESSENTIAL IN CANCER OF THE BREAST

The picture of carcinoma of the breast is a discouraging one. In this country, some 20,000 women succumb to this disease each year. In Iowa, there are approximately 400 deaths from mammary cancer annually.

In a discussion of the results of treatment of breast cancer at Johns Hopkins Hospital, Lewison[1] states, "Among females, breast cancer represents an incidence of 21.7 per cent of all malignant conditions, and it is the most frequent specific primary site of cancer in either sex." He goes on to say, "The over-all standardized breast cancer death rate for females has remained virtually unchanged during the past quarter century." Hammond,[2] in a study of cancer death trends and cure rates, concludes: "The death rate for cancer of the breast shows almost no change from 1930 through 1956. This is a disappointment, considering the intensive effort which has been made in recent years to control this disease."

The end results at the Johns Hopkins Hospital in primary cancer of the breast during 1941-1945 revealed a five-year survival of 69 per cent in patients with localized lesions, and 30 per cent in patients with regional metastasis.[1] At the Mayo Clinic, in a discussion of some 9,000 cases of breast cancer from 1910 to 1945,[3] it was reported that in the entire experience there had been a five-year survival rate of 53.2 per cent. In those patients without axillary metastasis, the five-year survival rate was 78 per cent. In the group with axillary metastasis (59.7 per cent of the entire number of patients), the five-year survival rate was 36.2 per cent. In a comparative study of survival rates from different treatment centers, Rosahn[4] found that in terms of absolute survival, the five-year survival rate varied from 36.4 to 42.9 per cent. In four surveys in which five-year survival rates were calculated by a modified life table method, the rates varied from 35.9 to 45.1 per cent.

As one studies the results from various treatment centers, the futility of comparison becomes apparent. At each center, there is an inevitable selection of patients. Clayman, Webber and Palmer[5] state that selection of patients for various types of treatment is unavoidable, and may be subtle and substantial. That selection may be warranted or necessary in cancer therapy, but it is inappropriate to draw conclusions as to therapeutic efficiency on the basis of a study of selected cases.

The size of the lesion has great significance. A study was made of 216 patients with cancer of the breast at the University of Chicago.[5] Among women in whom the lesion was less than 2.0 cm. in diameter, the five-year survival rate was 93 per cent. This figure contrasts sharply with the 77 per cent survival in all localized lesions, and 42 per cent survival in those patients with local metastasis. Gray and his colleagues,[6] in a study of 289 patients in Atlanta, found that a significantly large percentage of patients who died within five years had had lesions more than 4.0 cm. in diameter at the time of operation. No patient free from disease five years after operation had had a tumor more than 6.0 cm. in diameter.

The grade of carcinoma or the degree of malignancy is a vital factor in the outcome of any patient with carcinoma of the breast. In the Mayo experience, also, the more malignant the neoplasm, the greater the incidence of metastasis. Grade 1 lesions had axillary metastasis in 10.4 per cent of the cases; Grade 2, in 20.7 per cent; Grade 3, in 56.3 per cent; Grade 4, in 74.5 per cent.

The earlier a carcinoma is detected and treated, the better the outcome. However, there isn't always a correlation between the duration of the symptoms and the size of the tumor, for memory is often faulty, and an admission of delay in seeking professional judgment isn't always acknowledged. If the experience at Rochester[3] is any indication, cancer of the breast is being recognized more promptly than it used to be. During several periods, the incidences of axillary metastasis have been as follows:

1910-1924	66.6 per cent
1925-1934	66.4 per cent
1934-1944	57.0 per cent
1945-1949	51.2 per cent
1949-1954	47.6 per cent

In the latest period on which the Mayo Clinic reported, 1950-1954, its five-year survival rate in patients without metastasis was 83 per cent, and in patients with axillary metastasis, the five-year survival rate was 46.4 per cent. These figures were thought of as marking a "notable" improvement over the earlier experience with the disease. Cutler[7] compared the survival rates in Connecticut during the periods 1935-1944 and 1945-1954. The crude five-year survival rates were 49 per cent and 53 per cent, respectively. For localized lesions, the five-year survival rate was 68 per cent in the earlier decade and 70 per cent in the later period. In patients with axillary metastasis, the five-year

survival rate was 37 per cent in 1935-1944, and 41 per cent in 1945-1954.

In this country, radical mastectomy followed by roentgen therapy has been the accepted treatment for cancer of the breast. In addition, oophorectomy has been performed in patients who developed the disease before the menopause or within a few years after the cessation of the menses. Criteria for operability have varied with the individual surgeon. In recent years, chemotherapy has been employed in addition to surgery, but thus far its efficacy and safety have not been fully evaluated. According to Lewison:[1] "More lives are probably shortened by poor selection than by poor surgery." In a frank appraisal, he continues: "It requires a certain gallantry to confess honestly that the criteria for appropriate treatment for the appropriate patient is thus far unknown—merely a mirage of hope." He feels that it is the field of immunity in the host-tumor relationship that holds promise for the prevention, diagnosis and treatment of cancer.

From the studies in Connecticut, Cutler[7] concludes: "The stability of survival rates for cancer of the breast should not be interpreted as an indication that treatment is futile. However, from the fact that the incidence, mortality and survival rates have been stable for many years, we infer that future improvement is more likely to result from the development of new therapeutic techniques rather than from refinement of current methods."

Montgomery and colleagues,[8] from Philadelphia, reported that at the Jefferson Medical College Hospital during 1958 and 1959, there were 2,416 curettages done for diagnostic purposes, and 42 cancers (1 in 57) were found. During the same period there were 945 breast biopsies, and 205 (1 in 4.6) revealed cancer. They concluded: "The general surgeon does not see breast cancer in an early stage, and physicians in general do not look with sufficient suspicion upon inconspicuous disturbances of the breast." Lewison[1] emphasizes that the profession and the public alike "must become more and more alert to the dangers of breast cancer on less clinical evidence."

Until chemotherapy of cancer has been shown effective and free from serious hazard, or until new therapeutic approaches are developed, the current treatment methods must serve. The full potential of present-day therapy has not been realized, for carcinoma of the breast is not detected sufficiently early so that cures can be effected. Every adolescent girl must be taught the technic of self-examination of the breast and must be convinced of its importance. The physician who fails to teach the procedure is remiss in his duty to the patient! Moreover, a careful physical examination should be carried out at six-month to one-year intervals by the family physician, and the patient should be notified that check-up time is approaching, in just the same manner that she is recalled by her dentist for a dental appraisal!

Since the breast is an external organ that can be readily examined, and since cancer of the breast is the commonest of all cancers, failure to detect cancer in the early stage must be attributed to carelessness about seeking it out. Until the public and the medical profession become imbued with the belief that death from cancer of the breast is preventable, the sad toll will continue. Incessant diligence and consistent effort can change this most disconcerting picture!

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THE TRANSMISSION OF CANCER

No harm is done by looking back occasionally. In 1949 a study was reported concerning the communicability of mammary carcinoma in mice.* But the communicability of the disease was from generation to generation, rather than from one to another animal of the same generation.

The fundamental facts of the study can be expressed simply. Certain families of mice are known to have a breast-cancer tendency, and others are known to be without this tendency. All female newborns who nursed from a mother (natural mother or foster mother) belonging to the cancer-tendency strain transmitted a malignant potential to their offspring and usually developed mammary cancer themselves in later life. The converse was also true—i.e., all female newborns who nursed only from mothers of the non-cancer strain failed to develop mammary cancer and did not transmit the malignant potential to later generations. These facts were persistently valid, even though newborns, mothers and strains were scrambled. The conclusion is clear that a mammary cancer agent is transferred from generation to generation of mice in the mother's milk.

The cancer agent lies dormant until later life, when in response to mysterous and unknown acti-

* Gross, L.: "Vertical epidemic" of mammary carcinoma in mice. SURG., GYNEC. & OBST., **88**:295-308, (Mar.) 1949.

vating factors, mammary cancer develops. Prior to the actual onset of cancer, however, the agent itself can be passed on to the succeeding generation by nursing. What the mysterious activating factors may be is not clear, but a reduction in caloric food intake definitely lowered the incidence of actual breast malignancy in mice without in any way affecting the transmission of the agent to the next generation.

The cancer agent is believed to be a virus.

This study, aided perhaps by a little imagination, brings to mind three dreary thoughts:

1. A malignant virus of one sort or another may quite possibly be all about us and everywhere within us, waiting only for the proper environmental factors, known or unknown, to activate the malignancy itself.

2. The ultimate destruction of life by a parasitic malignant agent may represent the working of one of the forces that help to preserve the normal balance of nature, rather than the operation of one of those that occasionally upset it.

3. The scientists have taken our cigarettes and now covet our calories. What will be next?

A LETTER FROM CANADA

In those members of the profession who have been taking a *laissez faire* attitude toward the encroachment of government upon the practice of medicine, a letter in a recent issue of the BRITISH MEDICAL JOURNAL* may prompt a more aggressive opposition. The communication was directed to the editor by two physicians who had emigrated from England to British Columbia. The last two paragraphs of the letter are as follows:

"As ones who have endured the frustrations and injustices of both the hospital and general medical services of the British N.H.S. before emigration, we sincerely hope and believe that Canada, profiting by the experience of other countries, can and will find a national health plan both beneficial to her people and acceptable to their doctors. In Canada today an honourable doctor can practise medicine fully and with satisfaction whilst receiving a fair reward for his genuine efforts on behalf of his patients. May the good features of Canadian medical practise—namely, the independence of the individual doctor, free choice of doctor for the patient, admission of the general practitioner to the hospital staff, equality of status between all specialties as well as the general practitioner on the hospital staff, partial payment for medical services by the individual receiving them, and the 'fee for service' principle—be preserved in any future health service here.

"Perish all bureaucratic 'capitation' systems, and salaried hierarchies. Long live the 'freedom of medicine' (in Canada at least)!"

* **1**:826, (Mar. 18) 1961.

A PHYSIOLOGICAL EXPLANATION OF ENURESIS

The child with enuresis has always been a disturbing problem for the mother and an enigma for the physician. Bladder "training" of the toddler has been a great source of conflict between parent and child. The child psychologists have been prone to attribute enuresis to some basic emotional conflict, but clinicians have insisted that it occurs in perfectly normal, well-adjusted children, and that it has a familial pattern of occurrence.

Muellner,* following a fluoroscopic study of 1,000 children, has elucidated the physiology of micturition, and has offered a sound physiological explanation of primary enuresis. The infant voids automatically by a detrusor mechanism. The detrusor contracts spontaneously when its limit has been reached, and the contraction is maintained until the bladder has emptied. The infant cannot voluntarily initiate or stop urination. Bladder control is a self-acquired skill that most children acquire by the age of 4½ years.

Voluntary bladder control requires the coordinated action of the thoracic diaphragm, the abdominal muscles, and the pubococcygeus (the anterior half of the levator ani muscle). According to Muellner, the first step in the act of micturition consists of the descent of the vesical neck, which is accomplished by the contraction of the diaphragm and the abdominal muscles, and the simultaneous relaxation of the pubococcygeus muscle. The downward push of the vesical neck is the stimulus which initiates the contraction of the detrusor muscle, which starts at the vesical neck and spreads upward to the sides and the dome of the bladder. The contraction of the detrusor opens the internal sphincter, and micturition occurs.

To attain voluntary bladder control, the child must learn the necessary skill to manipulate intra-abdominal pressure. The first step in progressing from the infantile bladder-emptying pattern is the development of a cognizance of bladder-fullness and of a desire to void. Somewhat later, the infant acquires the ability to communicate this desire. The next step in the devolpmental process is that of learning to retain urine despite a desire to void, and this is accomplished by using the levator ani muscle to inhibit the detrusor contraction. The third step is the acquiring of an ability to initiate micturition when the bladder is full or partially full. It results from the contraction of the diaphragm and the abdominal muscles to increase the intra-abdominal pressure. The last step is that of acquiring an ability to initiate urination at any degree of bladder filling. It comes much later, and involves the simultaneous contraction of the dia-

* Muellner, S. R.: Development of urinary control in children. J.A.M.A., **172**:1256-1261, (Mar. 19) 1960.

phragm and abdominal muscles, and the relaxation of the pubococcygeus.

When the child has achieved voluntary control over the bladder, he or she can then control bladder capacity. Through the use of this mechanism, the bladder capacity is doubled between the ages of 2 and 4½ years. It is the enlarged bladder capacity that permits night control of urine, and enuresis occurs in children who have not succeeded in enlarging their bladder capacity.

Muellner believes that the potential enuretic can be recognized by the time he reaches three years of age. The bladder capacity can be increased through a simple program of forcing liquids during the day and encouraging the child to hold the urine as long as possible. In this manner the bladder capacity can be increased from 4-6 oz. to 12-14 oz. over a period of three to six months. Obviously, cooperation of both child and parent is necessary if success is to be achieved.

Since voluntary micturition is a self-acquired skill, the futility of premature efforts to "train" the child must be obvious. Muellner's study confirms the fact that there is no correlation between urinary control and the effort that parents have expended on "bladder training."

BONE CHANGES IN DIABETES MELLITUS

The problem of differentiating a neuropathic from an ischemic basis in the soft tissue necrosis of a patient with diabetes mellitus is often difficult. The judgment is of great importance to the patient, for an improper decision may lead to an unnecessary amputation.

Naide and Schnall report that the bone changes on x-ray are a determining factor in the decision whether the necrosis is due to a faulty blood supply or to neuropathy.* Rarefaction, lysis or bone destruction will not occur in the foot of the patient with diabetes mellitus unless the circulation is adequate. The bone changes demonstrated by x-ray are often mistakenly attributed to ischemia with osteomyelitis because one or both pulses may be absent in the foot, despite other evidence of good blood flow.

Confirmation of the fact that ischemia alone does not result in bone necrosis was provided by x-rays in 20 patients with thromboangiitis obliterans and ischemic necrotic toe lesions.

It is estimated that from 20 to 30 per cent of lesions in the feet of patients with diabetes are on a neuropathic basis, rather than due to ischemia. In neuropathic necrosis, one or both pulses may be present, or the collateral circulation is adequate. The foot or toes are warm. The reflexes and vibratory sense are impaired. Claudication is usually absent, and there is little or no pain. Bone destruction or resorption is out of proportion to the amount of skin necrosis.

Paradoxically, the prognosis of the foot lesion in diabetes is better if bone-necrosis destruction is *present,* for it indicates neuropathy. If the toe or foot is black and the bone is intact, ischemia and a serious prognosis are indicated. Minimal surgery is required for necrosis due to neuropathy, whereas leg amputation is frequently required in cases of ischemic necrosis.

The physician confronted with the problem of soft-tissue necrosis of the foot in a diabetic patient should find an x-ray of the foot of great value in differentiating neuropathy from ischemia and in deciding upon the proper treatment of this serious complication.

* Naide, M., and Schnall, C.: Bone changes in necrosis in diabetes mellitus; differentiation of neuropathic from ischemic necrosis. ARCH. INT. MED., **107**:380-383, (Mar.) 1961.

TREATMENT OF BACTERIAL AND VIRAL DISEASES

Dr. Ian Maclean Smith has asked us to correct an error in his paper "Bacterial and Viral Diseases of Man and Their Treatment." Regarding the use of polymyxin in combatting certain gram-negative organisms (J. IOWA M. SOC., 51:204, Apr., 1961), he intended saying: "It is given in doses of .02 to .05 Gm. in 8-12 hourly intramuscular doses. . . ." Whether the error was ours or not, we are very sorry that it occurred.

HYDRAMNIOS AND ATRESIA OF THE UPPER ALIMENTARY TRACT

At a recent meeting of the Royal College of Obstetricians and Gynecologists on the subject of fetal abnormality, the frequent association of hydramnios and atresia of the upper alimentary tract of the neonate was pointed out.* In both Liverpool and Birmingham, it was said to be routine practice to pass an esophageal tube in all babies born of mothers with hydramnios.

The incidence of hydramnios is about 7 per 1,000, and in Liverpool from among 318 patients with hydramnios, 131 monsters and 187 apparently normal children were born.

The frequency of congenital anomalies in babies born of mothers with hydramnios has been common knowledge. In view of the fact that there frequently is a delay in the recognition of atresia of the upper gastrointestinal tract in the newborn, and a hazard of aspiration and infection, it seems a wise and practical measure to establish the passing of an esophageal tube as a routine procedure in the management of babies born of mothers with hydramnios.

* Foetal Abnormality. Conference at the Royal College of Obstetrics and Gynecology. BRITISH M. J., **1**:1102-1103, (Apr. 15) 1961.

President's Page

Again, I should like to ask questions.

As I plan to visit the county medical units, I should like to know what questions you doctors think would be pertinent for discussion at such meetings.

Do you want to take up the Blue Shield problem?

Do you want us to talk about medical public relations?

Shall we discuss legislative problems?

Do you want better knowledge of the workings of the State Office?

Are there other topics that come to your minds?

A letter addressed to me, stating what you think should be discussed would be appreciated.

Geo. T. Greene.

President

THE JOURNAL *Book Shelf*

BOOKS RECEIVED

MEDICAL PHARMACOLOGY, by *Andres Goth*, M.D. (St. Louis, The C. V. Mosby Company, 1961. $11.00).

CALDERWOOD'S ORTHOPEDIC NURSING, by *Carroll B. Larson*, M.D., and *Marjorie Gould*, R.N. (St. Louis, The C. V. Mosby Company, 1961. $6.50).

CHEMICALS IN YOUR FOOD, by *Franklin Bicknell*, M.D. (New York, Emerson Books, Inc., 1961. $2.95).

THE CARDIAC ARRHYTHMIAS, by *Brendan Phibbs*, M.D. (St. Louis, The C. V. Mosby Company, 1961. $7.50).

FIELD STUDIES IN THE MENTAL DISORDERS—VOL. XV, ed. by *Joseph Zubin*, Ph.D. (New York, Grune & Stratton, Inc., 1961. $6.75).

COOPERATIVE EPIDEMIOLOGY OF MENTAL DISORDERS, ed. by *Paul H. Hoch*, M.D., and *Joseph Zubin*, Ph.D. (New York, Grune & Stratton, Inc., 1961, $9.75).

HEREDITY IN OPHTHALMOLOGY, by *Jules Francois*. (St. Louis, The C. V. Mosby Company, 1961, $23.00).

METHODS OF NEURO-OPHTHALMOLOGIC EXAMINATION by *Alfred Kestenbaum*, M.D. (New York, Grune & Stratton, Inc., 1961. $16.75).

RECOGNIZING THE DEPRESSED PATIENT, by *Frank J. Ayd, Jr.*, M.D. (New York, Grune & Stratton, Inc., 1961. $3.75).

SCIENCE AND PSYCHOANALYSIS, by *Jules H. Masserman*, M.D. (New York, Grune & Stratton, Inc., 1961. $6.75).

BOOK REVIEWS

GROWING UP TO LOVE, SEX AND MARRIAGE, by *Sidney L. Sands*, M.D. (Boston, The Christopher Publishing House, 1960. $3.00).

This promises to be a helpful and useful book for laymen and for physicians who are interested in helping young people establish a philosophy of marriage based upon an understanding of themselves as individuals and as prospective marriage partners. From his broad psychiatric knowledge and experience, the author goes to great pains to describe the physical and emotional growth of man. He describes man's gradual achievement of emotional maturity. He traces the development of love from self-love to object-love. He describes the role of instincts, and uses considerable skill in explaining psychosexual development.

Based on his knowledge and experience, Dr. Sands gives us a detailed picture of happy and unhappy marriages. He painstakingly outlines what he considers a healthy marriage. He explains what he feels a parent's attitude should be toward children, and how the two marriage partners can help their children mature emotionally and achieve the happiness that a successful marriage brings. He points out a number of reasons why people sometimes fail to become successful marriage partners. His basic concept, of course, is that marriages often fail because one or both partners haven't achieved maturity.

All of these points are presented in simple terms that the layman can easily understand. There are no psychiatric terms anywhere in the book.

I would recommend this book to everyone who is interested in understanding himself better, and in understanding and fulfilling his role as a partner in a marriage and as a member of a family. It is interesting, informative and enjoyable reading matter. —*W. A. Tice*, M.D.

OBSTETRICS, TWELFTH EDITION, by *J. P. Greenhill*, M.D. (Philadelphia, W. B. Saunders Company, 1960. $17.00).

Despite the rapid advance and expansion of the basic knowledge and clinical application of obstetrical principles, Dr. Greenhill has done an admirable job of making the twelfth edition of his book thoroughly comprehensive. Twenty-three contributors produced much of its contents and deserve generous shares of credit for their work.

The first part, "The Physiology of Pregnancy, Labor and the Puerperium," occupies 370 pages. The first 70 of them seem burdensome, filled with details and difficult to comprehend, but once over this hurdle, one finds the reading pleasurable and the continuity more obvious. The second section, "Physiology and Conduct of Labor," is standard in its coverage. The third section deals with the physiology and conduct of the puerperium. Of the first 27 chapters, six have been done by contributors.

The second part of the book takes up "The Pathology of Pregnancy, Labor and Puerperium" and covers 682 pages. The chapter on toxemia of pregnancy is a particularly comprehensive summary of present-day knowledge. Chapters 38 through 42, on "Diseases," are done by contributors of particular note in their respective fields. Chapter 49, on erythroblastosis and other blood factors, is also worthy of note, as is chapter 50, on diseases of the chorion, hydatiform mole, syncytioma and chorion carcinoma.

As in previous editions, the section on pathology of labor is well done. Special mention should be made of chapters 67 and 69, which deal with the pathology of the newborn and with prenatal brain injury. Both are especially good.

The last section, on operative obstetrics, is standard as regards material, except that chapter 79, on medical moral problems, is an appropriate and much needed addition.

I have made no attempt to credit the various contributors, but the majority of the chapters that I have singled out for special mention have been written by those men. Dr. Greenhill did well in recognizing the need for authoritative statements by experts in the obstetrical sub-specialties. This edition exceeds the

eleventh in detail, in illustrations and in content, yet it is only 10 pages longer—again to the credit of Dr. Greenhill.—*Claude H. Koons,* M.D.

WOMEN AND FATIGUE, by *Marion Hilliard,* M.D. (Garden City, New York, Doubleday & Company, Inc., 1960. $2.95).

This is a well-written, absorbing short volume, revealing a warmth and a realistic philosophy that the author has gained through 30 years of practice. She makes a bona fide effort to explain the problem of fatigue in an understandable manner.

The following paragraph best explains the purpose of the book and the author's solution: "Yes, fatigue has many faces, the frustrated, the bored, the lonely, those who suffer from inability to love or make love. The genuinely overworked, those who try to be all things to all people, those who live with secret fear or quiet; those who live with uncertainty. We must look within ourselves and find the way to live joy, happiness and confidence which will release energy for use."

Although there may be some question as to the general acceptance of Dr. Hilliard's philosophy, the exhilarating effect it must have on the intelligent patient cannot be denied.

The chapter entitled "Shadows Cast by Our Modern Way of Life" is particularly stimulating.

This book is recommended for all doctors' waiting rooms.—*Claude H. Koons,* M.D.

A MANUAL OF CUTANEOUS MEDICINE, by *Donald M. Pillsbury,* M.D., *Walter B. Shelley,* M.D., and *Albert M. Kligman,* M.D. (Philadelphia, W. B. Saunders Company, 1961. $9.50).

This book, by members of the Department of Dermatology at the University of Pennsylvania School of Medicine is a praiseworthy contribution. Although it is a manual and not a comprehensive textbook, it is very useful.

The early chapters on the anatomic, physiologic and chemical factors in diseases of the skin give a perspective of dermatology which alone makes the book worthwhile. The chapter on pathologic patterns and dermatologic diagnosis put conditions in simple perspective. The various chapters mention only essentials. Discussions of treatment are simple and to the point. The book does not repeat statements which have only historical interest, and are no longer true.

The volume will be valuable for the general practitioner.—*S. Greenhill,* M.D.

HANDBOOK OF PEDIATRICS, FOURTH EDITION, by *Henry K. Silver,* M.D., *C. Henry Kempe,* M.D., and *Henry B. Bruyn,* M.D. (Los Altos, Calif., Lange Medical Publications, 1961. $3.50).

This little volume, measuring four by seven inches and containing some 500 pages, has in it a vast amount of valuable information for quick reference. In addition to essential tables of reference—drug dosages, normal values, dietetic regimens, guides for correction of electrolyte imbalance, etc.—there are concise descriptions of diseases of the various body systems.

Though designed for the house officer, it provide a readily available digest of materials for the diagnosis and management of pediatric disorders for the busy physician.—*Dennis H. Kelly, Sr.,* M.D.

THE YEAR BOOK OF DRUG THERAPY (1960-1961 YEAR BOOK SERIES), ed. by *Harry Beckman,* M.D. (Chicago, The Year Book Publishers, Inc., 1961. $8.50).

THE YEAR BOOK OF DRUG THERAPY, one of 15 such volumes published annually, has its usual format. Abstracts of important articles on therapeutics are listed generically, according to the disease process or system involved. Editorial comments are sometimes added when the editor disagrees with conclusions that have been drawn, or when he wishes to stress a particular point. Perhaps new to some readers in the addition, in blue paper, of a section on "Bases for Judgment of a New Drug." In its 65 pages are listed Dr. Beckman's rather critical evaluations of some of the more important new drugs, plus a rather general discussion of ways and means by which the clinician may evaluate a new drug after the salesman has given his pitch.

The Year Books are all excellent "Reader's Digests" for the busy practitioner. Here, one can scan the important articles on a given therapeutic subject in just a few minutes. Of course, the outstanding features of this particular Year Book are the editorial comments of Dr. Beckman. He has a wonderful ability to add pithy, pertinent and humorous comments—an ability that has remained unchanged through the years. Without him, this Year Book would be "just average." —*Daniel A. Glomset,* M.D.

SHORT COURSE IN PEDIATRICS AT ESTES PARK

The University of Colorado College of Medicine is to conduct a five-day postgraduate short course in pediatrics at the Stanley Hotel, in Estes Park, on August 21-25. It is designed primarily for the practicing pediatrician, but all qualified physicians with an interest in the subject are welcome to attend. Registration can be for the entire course, or for any three consecutive days. The physicians' wives and children are welcome, and special entertainment will be provided for them. Tuition is $60 for the entire course, or $35 for three days, and there is an additional $10 registration fee.

The guest faculty members will be Henry L. Barnett, M.D., head of pediatrics at the Albert Einstein College of Medicine, New York City; Reginald S. Lourie, director of psychiatry at the Children's Hospital, Washington, D. C.; and A. Ashley Weech, M.D., head of pediatrics at the University of Cincinnati. Seventeen members of the CU faculty will participate.

Inquiries and requests for reservations should be addressed to the Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20.

Iowa Chapter of the American Academy of General Practice

POISON INFORMATION AND TREATMENT CENTERS

As every practicing physician knows, there is a great need for the prevention of deaths by poisoning. Since it wasn't enough just to educate the public to keep poisons away from those most likely to ingest them, the next step has been to set up efficient information and treatment centers throughout each state.

At present, in Iowa, there is a complete poison information center at Blank Hospital, a division of Iowa Methodist Hospital, in Des Moines, and there is another that has been organized in conjunction with the State University of Iowa, in Iowa City. Within seconds, any doctor in the state can get information as to the exact nature of any ingested substance, and can begin appropriate treatment.

Through the Division of Maternal and Child Health, the State Department of Health has sponsored the establishment of these information centers, and as interest in *treatment* centers has developed, the Iowa Pharmaceutical Association has taken an active part in establishing over 40 such services throughout the state. The IPhA has a "blue print" for a treatment cabinet which outlines the antidotes, medications and information needed in the treatment of various types of poisonings.

Local treatment centers can be established and approved if the following criteria are fulfilled:

1. Each treatment center must have received the approval of the local medical society for its organization.
2. An executive committee must be selected to assume responsibility for the operation of the center, and the director of the center must be a physician.
3. Each center, through its executive committee, must decide the scope of its activity, and must prepare written plans and statements of policy—i.e., regarding the individuals to whom information is to be given, regarding the individuals who will assume responsibility for treatment, etc.
4. These treatment centers must be staffed so that they can be open and available 24 hours a day. In the usual hospital, the poison treatment center will need to be in the emergency room.
5. Each center must use the standard report forms, and forward them to the Division of Maternal and Child Health for follow-up. Otherwise, the volume of cases handled in the state will remain uncertain, and information to be used in educational programs will never be accumulated.

Already, several children's lives have been saved by quick phone calls to information centers, and through the prompt use of the facilities at the treatment centers. These benefits should inspire the formation of more centers throughout the state.

IOWA POISON INFORMATION CENTER

Everett Nitzke, M.D., Director
Raymond Blank Memorial Hospital
Des Moines 14, Iowa
Telephone: ATlantic 8-7271, Extension 239

POISON INFORMATION SUB-CENTERS

City	County	Location	Director
Boone	Boone	Boone County Hospital	Chief, Medical Staff
Fort Dodge	Webster	Lutheran Hospital	Charles Baker, M.D.
Mason City	Cerro Gordo	Mercy Hospital	Harold Morgan, M.D.
Spirit Lake	Dickinson	Dickinson County Hospital	Donald Rodawig, Sr., M.D.

NEW POISON TREATMENT CENTERS IN IOWA

City	County	Location	Director
Atlantic	Cass	Atlantic Hospital	W. F. Giegerich, M.D.
Cedar Rapids	Linn	Mercy Hospital	(M.D. to be named)
			Wm. Nelson, Act. Pharmacist
		St. Luke's Hospital	Walter Block, M.D.
Clarinda	Page	Clarinda Municipal Hospital	K. V. Jensen, M.D.*
Cresco	Howard	Mercy Hospital	P. A. Nierling, M.D.*
Davenport	Scott	Mercy Hospital	George Morrissey, M.D.
		St. Luke's Hospital	R. W. McConnell, M.D.
Eldora	Hardin	Eldora Hospital	David H. Glenn, M.D.*
Emmetsburg	Palo Alto	Palo Alto County Memorial Hospital	F. X. Cretzmeyer, M.D.
Harlan	Shelby	Myrtue Memorial Hospital	W. S. Markham, M.D.
Independence	Buchanan	People's Hospital	(M.D. to be named)
			Jack McGrane, Act. Pharmacist
Iowa City	Johnson	S.U.I. Hospitals	Chief of Pediatrics
			Wm. Tester, Ex. Dir., Chief Pharmacist
Jefferson	Greene	Greene County Hospital	G. F. Canady, M.D.
Marshalltown	Marshall	Evangelical Hospital	Chief, Medical Staff
			Rev. H. C. Buchmueller, Ex. Dir.
Newton	Jasper	Skiff Hospital	John Ferguson, M.D.*
Oelwein	Fayette	Mercy Hospital	R. S. Jaggard, M.D., Chm.*
Onawa	Monona	Onawa Hospital	L. A. Gaukel, M.D.
Ottumwa	Wapello	Mercy Hospital	Edward Ebinger, M.D.*
		Ottumwa Hospital	W. K. Whitehouse, M.D.
Shenandoah	Page	Hand Hospital	Kenneth Gee, M.D.
Waterloo	Black Hawk	Allen Memorial Hospital	R. Mitchell, M.D.

* Member of the Iowa Chapter of the American Academy of General Practice.

POISON CONTROL AND PREVENTION*

The role of public health personnel in poisoning control can be broken down into three major functions: (1) participating in the establishment of treatment centers and in the maintenance of facilities for treatment of poison patients; (2) collecting and reporting epidemiologic data to poison control centers; and (3) educating the public to take proper precautionary measures.

THREE TYPES OF CENTERS

Most of the poison control centers now in existence fall into one of these three types of functioning units:

1. *Poison Information Center*—collects, classifies and disseminates information about composition, toxicity and treatment of potentially toxic products and substances. Usually located in a large health department, medical school or pharmacy school where services of a complete library and specialists are available.

2. *Poison Treatment Center*—equipped with necessary antidotes and facilities to render emergency treatment for poisoning. Usually maintains small reference library allowing limited information concerning toxicity and treatment to be given to physicians; some also give first-aid advice to parents. Works closely with an information or poison control center.

3. *Poison Control Center*—a more comprehensive unit combining poison information service with complete treatment facilities. Usually located in a large general or children's hospital.

COLLECTING DATA

An important function in poisoning control carried on by the health department is collecting information on cases and supplying epidemiologic data to poison control centers. "The importance of definitive epidemiologic information about specific poisoning hazards in a particular local health jurisdiction cannot be overemphasized. Data on seasonal trends, types of poison, age groups, location and various contributing, causative or underlying factors may be found in death certificates and other vital records. . . . Collection and analysis of data from the files of local emergency clinics, police and rescue crews, physicians or hospitals is also rewarding."[1]

* Excerpted from CURRENTS IN PUBLIC HEALTH, Vol. 1, No. 2 (May, 1961), published by Ross Laboratories, Columbus 16.

Using epidemiologic studies as a first step, a working diagnosis of the extent of the community problem can be made. Health departments can then initiate planned programs of professional and community education designed to create public awareness of poison hazards.

For example, the Florida State Department of Health carries on an active program, making a three-pronged attack against poisoning accidents.[2] Poison control centers treat cases and dispense information; public health nurses from county health departments follow up on reported poison accidents, and the State Board of Health analyzes the collected data, planning its program accordingly.

A doctor with a potentially poisoned patient has only to phone the center nearest him, indicating the brand name of the product involved, to receive available information about the proper method of treatment. Mild cases of poisoning can be treated in his office or the local hospital; others are taken to the nearest poison control center for additional treatment.

Florida, like many other states, has a follow-up program. When a poison case is reported, a public health nurse from the county health department visits the home of the victim. She tries to learn where the substance was kept and why the accident happened, and may suggest ways to keep the same type of accident from happening again.

The information submitted by the doctor or hospital and that determined by the public health nurse is sent to the State Board of Health, tabulated and then sent to the National Clearinghouse for Poison Control Centers for further study.

EDUCATING THE PUBLIC

The lag in promoting preventive activities "may be explained by lack of effective techniques and materials. A vigorous community education program, as a cooperative poison control center and local health department venture, has not been fully exploited. Home follow-up visits may be an effective, but limited technique. Local, state and national groups must cooperate in corrdinated and concentrated preventive activities."[3]

In the Home. Because the public health nurse works within family settings, she is in a position to make a significant contribution toward reducing the number of accidental poisonings occurring in the home.[4] She can be alert to potential hazards, encourage careful reading of labels and identification of poisonous medications, and interpret the services of the poison control center. The nurse can alert parents to those substances, especially aspirin, which are not always recognized to be dangerous but which can cause death. Then, she will want to teach parents in terms they can understand the importance of seeing that potential poisons are not left where a child can gain access to them, the use of less toxic agents for verminicides, etc.

To make parents aware of the accidental poisoning danger, when visits cannot be made in every home, a routine form letter can be mailed to all parents whose children have reached 18 months of age. Such a letter sent by the Evanston, Illinois, Health Department warns parents of the danger of poisoning and lists methods of safe storage and handling of potentially poisonous substances. For example, it points out that no more than 25 of the 1½ grain aspirin tablets should be kept on hand. Obviously, the fewer aspirin in a bottle found by a child, the fewer he will ingest.

What parents are taught to do in case of a poisoning accident may be useless unless they are made fully aware that time is important when a poisoning has occurred. Reports indicate that in about 50 per cent of cases reported to poison control centers, there was a delay of more than an hour between ingestion of the product and the time the child received medical attention. Parents need to be impressed with the importance of seeking prompt medical attention, rather than waiting until obvious symptoms occur.[4]

In the Community. One effective educational method is the use of news releases keyed to seasonal causes of poisoning. Consultation with manufacturers of potentially poisonous products is another measure that can be taken by health departments. Conferences or discussions with groups of mothers can be planned as part of a community educational program. With a group of no more than a dozen members (8 to 10, preferably), a nurse who is skilled in group discussion technics can be effective in changing undesirable attitudes and behavior that are conducive to accidents.[4] Community campaigns and meetings with civic groups can be used effectively in creating public awareness of poisoning hazards.

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3. Cann, Howard M.: Speech delivered at the bi-annual meeting, Association of State Maternal and Child Health and Crippled Children's Directors, April 19-22, 1960, New Orleans.
4. U. S. Dept. of Health, Education, and Welfare, Public Health Service Publication No. 670. ACCIDENT PREVENTION, A HANDBOOK FOR PUBLIC HEALTH NURSES, 1959.

The Annual Meeting of the
IOWA MEDICAL SOCIETY
will be held at
Veterans Memorial Auditorium
Des Moines
May 13-16, 1962
Please mark you calendar

THE DOCTOR'S BUSINESS

Speculative Tempo Increases

HOWARD D. BAKER
WATERLOO

Back in 1959, when the market was rising steadily, there was a great deal of concern due to the increased amount of speculative and ill-informed security purchases. This "disease" subsided during 1960 when the market was low, and it appeared momentarily that the American public was returning to more realistic investment values. Today, the market is again bounding upward, and again the unknowns and the glamor stocks are becoming market favorites.

On April 4, 1961, New York Stock Exchange President G. Keith Funston issued an open warning asking people to use the same care in selecting stocks that they would use in buying an auto or any other major asset. He said, "Reports are reaching us which indicate that many would-be investors are purchasing shares of companies that they cannot even identify, whose products are unknown to them, and whose prospects are, at best, highly uncertain."

He added these words of warning, "There is disquieting evidence that some people have not yet learned that it is impossible to get something for nothing, and they are attempting to make improper use of the facilities of the investment community."

Again on May 16, Mr. Funston warned investors against "plunging headlong into speculations that they have not studied." He attacked the public's "preoccupation with low-priced shares and new issues of unseasoned companies. Experienced investors have long known that neither low price nor new issues are a guarantee of anything—except, usually, a proportionately greater degree of risk."

We like to think that in our times a general speculative craze on the scale of the one in 1928 and 1929 is impossible. It may well be that the structure of our modern society and markets are such that such a speculative "spree" could not take place. Nevertheless, excesses are occurring.

We have learned a great deal. In our modern society we seek the services of our physician and dentist if we are sick—rather than the advice of our barber or "Aunt Matilda." We go to our attorney with our legal problems—rather than to the pool room or grocery store. Add to this growing list of competent authorities the accountant, the auto mechanic, the plumber, the estate planner, the interior decorator, the architect and many others. But how many of us have our own professional investment advisor?

Most of us are content to just drift along from day to day with the ill-conceived notion that we are experts—or that our financial affairs will guide themselves.

Perhaps this is traceable to our tendency to *react* rather than *act*. Finding ourselves in financial distress, we run helter-skelter seeking relief. Only the more enlightened ones of us realize the necessity of advance financial planning. Financial distress, like most dental or physical distress, can be *prevented* much more satisfactorily than it can be remedied or cured.

Financial and investment planning is a job for professionals. Investment planning is available through brokers, investment counselors and investment fund managers. The person who entrusts his planning to such professionals need not fear being victimized by various and sundry tipsters and schemers.

In summary, the wise man will seek the services of his dentist, physician, attorney, barber and mechanic so as to avail himself of their respective training and talents. His financial planning will be in the hands of qualified professionals, and his investment advisor will tend his investment needs.

An oft quoted statement of Mark Twain's would seem to conclude this discussion very appropriately: "There are two times in a man's life when he should not speculate: when he *can't* afford it—and when he *can*."

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

STATE DEPARTMENT OF HEALTH

Edward J. Zimmer
COMMISSIONER

POLIOMYELITIS CASES—IOWA, 1960

County	Age	Sex	Date of Onset	Number of Injections	Date Completion of First Series	Date Subsequent Injections	Virus Isolation Studies
				PARALYTIC			
Clay	11	F	9-20-60	4	4-56	6-59	Not Done
Clinton	14	F	8-24-60	1	First inj. 8-60		Not Done
Des Moines	21	F	1- 4-60	0			Not Done
Ida	29	M	5-31-60	0			Not Done
Winneshiek	7	F	2-11-60	0			Type I
Worth	1	M	7- 7-60	0			Type I
				NON-PARALYTIC			
Black Hawk	15	M	8- 1-60	0			Not Done
Black Hawk	23	M	7-31-60	0			Not Done
Black Hawk	33	M	9- 2-60	3	5-59		Not Done
Black Hawk	44	F	8-15-60	0			Not Done
Bremer	19	F	8-22-60	3	1959		Not Done
Calhoun	24	M	9- 1-60	4	?*	4-60	Not Done
Clinton	9	M	8- 9-60	0			Not Done
Clinton	30	F	11-19-60	3	5-59		Negative
Delaware	21	M	8-29-60	3	1958		Not Done
Delaware	28	M	8-22-60	4	?*	7-59	Not Done
Delaware	39	M	8-29-60	3	10-57		Not Done
Dickinson	22	F	9-26-60	3	?*		Not Done
Hancock	16	M	8-19-60	5	1958	5-59, 5-60	Type I
Hancock	31	M	8-24-60	1	1957		Type I
Linn	9	M	8-15-60	2	First 2 inj. 1956		Not Done
Sac	6	M	7-25-60	0			Not Done
Webster	16	M	6-17-60	4	2-58	7-59	Not Done
Woodbury	7	M	6- 5-60	3	2-58		Not Done
Worth	38	M	9- 9-60	0			Type I

* Date of first series not established.

Of the 25 cases of poliomyelitis reported in Iowa for 1960 and listed above, only one resulted in death. The fatality was a seven-year-old child, a paralytic case reported from Winneshiek County. Of the other five paralytic cases, the 60-day surveillance reports indicated that two had made complete recoveries and that the other three had only minor residual involvements.

POLIOMYELITIS SUMMARY—UNITED STATES 1960

During 1960, there were 210 fatalities due to poliomyelitis reported to the Poliomyelitis Surveillance Unit of the Communicable Disease Center in Atlanta, Georgia. Of the 194 deaths in which localization of paralysis was known, 94 per cent were bulbar cases. The fatalities are presented in the following table by age group and vaccination history. The numbers of cases with residual paralysis and the paralytic cases/fatalities ratios are given for the various age groups.

The age distribution of fatal cases is quite different from that of the paralytic cases. Although 43 per cent of the paralytic cases were in children 0-4 years of age, only 20 per cent of the fatalities were in children of that age group. Conversely, one-half of the fatalities, but only 21 per cent of the paralytic cases, were in patients over 20 years of age. The paralytic case/fatality ratio has increased from 7.4 per cent in 1958 to 8.3 per cent in 1959 and to 9.5 per cent in 1960.

FATALITIES

Age Group	Doses of Vaccine 0	1-2	3	4	Unk.	Total	Total* Paralytic Cases	Paralytic Fatality Ratio (%)
0- 4	27	7	7	2	0	43	952	4.5
5- 9	16	9	8	5	1	39	514	7.6
10-14	4	5	3	2	0	14	174	8.0
15-19	6	2	0	1	0	9	113	8.0
20-29	35	6	4	1	3	49	264	18.6
30-39	22	6	0	0	2	30	140	21.4
40	23	0	0	0	2	25	56	44.6
Unk.	0	0	0	0	1	1	5	....
Total	133	35	22	11	9	210	2,218	9.5

* Fatalities and cases with residual paralysis reported to Poliomyelitis Surveillance Unit, Communicable Disease Center.

POLIOMYELITIS CASES—IOWA AND U. S., 1961

To date, only one case of poliomyelitis has been reported in Iowa for 1961. Preliminary investigation reveals that it is a non-paralytic case in a 49-year-old person who had had no immunizations.

For the same period, through May 20, a total of 171 cases had been reported nationally. Of these, 111 are paralytic. The following chart taken from the MORBIDITY AND MORTALITY WEEKLY REPORT, U. S. PUBLIC HEALTH SERVICE for June 2, gives the tabulations for paralytic and total cases reported nationally for corresponding winter and spring weeks of the past five years:

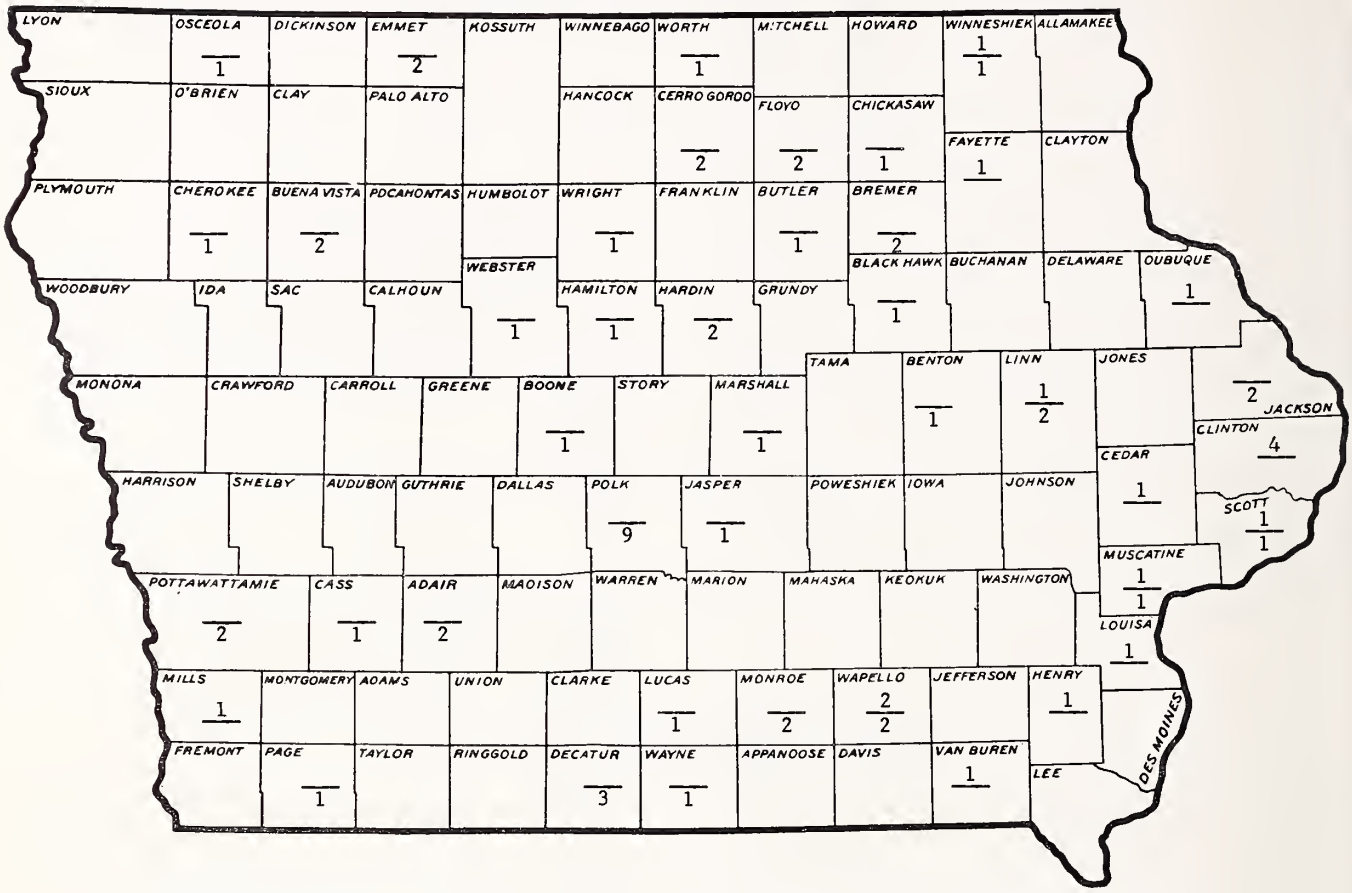
POLIO (CUMULATED WEEKLY) THROUGH THE 21ST WEEK FOR THE PAST FIVE YEARS

	1961	1960	1959	1958	1957
Paralytic	111	225	370	198	448
Total	171	312	530	379	910

MORBIDITY REPORT FOR MONTH OF MAY, 1961

Disease	May 1961	April 1961	May 1960	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	223	299	206	Johnson, Polk, Story
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	1227	1345	388	Calhoun, Des Moines, Dubuque, Linn, Pottawattamie
Whooping cough	12	5	4	Harrison, Pottawattamie
Brucellosis	18	22	42	Scott
Chickenpox	693	901	268	Clay, Dubuque, Lee, Polk, Scott, Story
Meningococcic meningitis	1	0	2	Woodbury
Mumps	743	850	452	Des Moines, Dubuque, Polk, Pottawattamie
Poliomyelitis	0	1	0	
Infectious hepatitis	229	369	28	Black Hawk, Boone, Polk, Woodbury
Rabies in animals	32	45	20	Hardin, Jones
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	21	36	32	For the state
Syphilis	80	111	112	For the state
Gonorrhea	153	97	99	For the state
Histoplasmosis	12	0	1	Cerro Gordo, Wapello
Food intoxication	0	0	0	
Meningitis (type unspecified)	1	1	1	Dubuque
Diphtheria carrier	0	0	1	
Aseptic meningitis	0	2	0	
Salmonellosis	5	7	2	Polk
Tetanus	1	1	0	Keokuk
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	0	
H. influenzal meningitis	1	1	0	Cerro Gordo
Amebiasis	1	1	7	Scott
Shigellosis	5	5	1	Bremer, Lucas, Muscatine, Polk, Woodbury
Influenza	11	0	0	Polk

TYPHOID AND PARATYPHOID FEVER CASES—1960 AND ALL KNOWN CARRIERS IN IOWA



Numerator = Cases
Denominator = Carriers

For 1960, there were 13 typhoid cases, 4 paratyphoid cases and 3 new carriers.

CASE REPORTS

During 1960, thirteen typhoid fever and four paratyphoid fever cases were reported and investigated. All cases except one developed in the eastern third of the state. Although that area of the state was subjected to some flooding early in the year, none of the cases either of typhoid or of paratyphoid could be associated with flooding. One case was reported in February. No further cases developed until June. Clinton County reported four cases—three of them in one family. The fourth case was the sister of the family's baby-sitter. The baby-sitter herself was mildly ill, but no diagnosis was made of her illness. All members of these two families spent much time at a beach and boating area on the Mississippi River. Both Clinton and Camanche dump raw sewage into the River. No definite source was found for these cases. The source of infection was definitely established in three other instances, however. In these others, carriers had infected their grandchildren.

CARRIERS

Twelve persons were removed during 1960 from the permanent typhoid carrier list. Three of them died; three had cholecystectomies, with subsequent negative stools; two patients who had had long temporary carrier conditions and who had received intensive medication with typhoid vaccine and Chloromycetin became negative; one carrier moved to another state; and three questionable carriers finally had sufficient numbers of consecutive negative stools to warrant their names' being removed from the carrier list.

The status of four of the 56 persons now on the typhoid carrier roster is questionable. Two persons are being carried on the roster because of insufficient evidence through consecutive negative stools to prove their status. A third, recently discovered to be carrying a typhoid infection in an abscess of the femur, may recover soon following surgery and medication. The fourth has had a cholecystectomy, but has submitted no release specimens.

Three carriers added to the roster this year all had previous histories of typhoid fever, in 1925, 1941 and 1947. As stated above, each of these three carriers from Linn, Wapello and Winneshiek Counties infected one person, a grandchild.

The age range in the carrier group is from 41 to 95 years. Eight persons are between 80 and 90 years of age. The median age for the 56 persons is 70 years.

Iowa Association of Medical Assistants

THIRD ANNUAL IN-SERVICE WORKSHOP

The Iowa Center for Continuation Study of the State University of Iowa, in cooperation with the Iowa Association of Medical Assistants and the Iowa State Medical Society, will present the third Medical Assistants In-Service Workshop on the campus of the State University of Iowa from September 10 through 15.

Tuition will be $50.00, which will include a "get acquainted" dinner Sunday evening at one of the Amana Colonies, housing Sunday through Thursday nights, breakfast Monday through Friday, daily coffee breaks, instructional material and an attendance certificate. Housing, breakfasts and coffee breaks are at the Continuation Center, and classes are held in the adjacent building, Butler Hall.

Dr. William D. Coder, coordinator of conferences at S.U.I., says, "The Workshop is offered in the sincere attempt to provide medical assistants with practical information about the general procedures for organizing and performing the business and routine office activities of the modern medical office."

The Workshop is not designed to answer all the questions and solve all the problems of the medical assistant; its purpose is to teach her to think, and to develop a questioning attitude. It is designed specifically for the secretary, receptionist, technician or nurse who deals directly with patients. The curriculum is varied in content so that it will be of interest and benefit to any medical assistant regardless of her specific duties. Instructors, with one exception, are members of the faculty of the State University of Iowa.

The tentative program will start Monday morning with "Improving the Office Environment." This segment is to be taught by a member of the Department of Mechanical Engineering and shows how to provide efficient office arrangement to increase work flow in the office by eliminating waste travel by the doctor, assistant and patient, not only by placement of rooms but in arrangement of their furnishings.

Monday afternoon the Home Economics Department representative will discuss grooming, both for work and after hours; and "The Office Nurse" will be the topic for discussion by a member of the College of Nursing.

Tuesday, the Department of Office Management will present a class in "Reception Techniques and Appointment Making"; "Gerontology and Its Problems" will be discussed by a member of the gerontology staff; and a representative of the Northwestern Bell Telephone Company will demonstrate "Proper Use of the Telephone."

Wednesday morning will be devoted to child psychology—the problem child, the parent of the problem child and technics for dealing with abnormal situations. Wednesday afternoon will begin with a discussion on "Religion and Medicine" led by a member of the School of Religion staff; and Dr. Coder will use the balance of the afternoon for a class in "Language Usage."

Thursday classes will cover the business side of the medical office with "Business Letters," "Filing, Indexing and Records Management," "Statements and Problems of Collecting," and "Office Arrangement." These classes will be conducted by members of the staff of the Department of Office Management.

The Workshop closes Friday with what many people consider the most interesting classes. The entire day will be devoted to psychology, with members of the Bureau of Labor and Management discussing "Human Behaviour and Its Causes; Why Adults Behave as They Do" and "The Mechanics of Adjusting to Frustration."

The members of the Iowa City District Association of Medical Assistants act as unofficial hostesses for these Workshops. On Tuesday evening they will conduct a tour of several medical offices so that Workshop registrants will be able to see various types of offices, equipment, accounting and filing systems, and receive suggestions for office short-cuts. On Wednesday September 13 the Workshop registrants will be invited to attend the regular meeting of the Iowa City Medical Assistants Association. This will be a dinner meeting at the Mayflower Inn, at which the local medical advisors and their wives, and Dr. and Mrs. Coder will be guests. An outstanding program has been planned and the Iowa City Chapter is looking forward to a big evening.

We are grateful to the State University of Iowa for presenting this course, to the Iowa State Medical Society for cooperating in planning and launching the original course, and to the many doctors who made it possible for their assistants to attend previous meetings. The course is not limited to members of our Association; anyone interested may register. Fliers will be sent to each member of the Iowa State Medical Society. These will include registration blanks and since registration is limited to 50 you are urged to register early.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Not gold, but only men can make
A people great and strong—
Men who, for truth and honor's sake
Stand fast and suffer long
Brave men who work while others sleep,
Who dare while others fly—
They build a nation's pillars deep
And lift them to the sky.
—Ralph Waldo Emerson

In every field of endeavor, in every "worthy cause with a future glorious," leadership is important. Someone must give direction and perspective to any undertaking worth accomplishing. The Auxiliary has such leadership. When information reached you concerning "Project Coffee Cup," I hope you accepted it as a pertinent and important task on which to start work. The officers of the Auxiliary trust that you members have kept "Coffee Cup" percolating merrily, so that by now all of your friends and neighbors have heard the Reagan record.

The Executive Committee met at my home on May 23 to become acquainted with their individual responsibilities and to formulate a few organizational procedures to present to the Board members on July 26. The four councilors in the Central Area were invited to attend. I was especially gratified that all of the officers were present. We profited a great deal by going over our plans for the year.

Mrs. L. V. Larsen, the second vice-president of the Auxiliary, has been compiling the articles for the YEARBOOK. That represents a tremendous amount of detailed work. Cooperation and promptness on the part of each county Auxiliary president in sending in her list of 1961-1962 officers was very much appreciated. When you receive your copy of the YEARBOOK, be sure to acquaint yourself with the important data that it contains.

—MRS. BENJ. F. KILGORE
President

NEWS ITEM

Mrs. R. F. Nielsen, of Cedar Falls, immediate past-president of the Iowa Auxiliary, was a guest of the Illinois Medical Auxiliary at its annual meeting. She reports that her reception there was "a bit of Southern hospitality in a cold North," and that the sessions provided her "a lesson in good Auxiliary relations and in how to conduct an effective convention." She received some valuable information which she will share with her successor as president, Mrs. B. F. Kilgore, and "met some excellent talent, made good friends of Illinoisans, Kentuckians and Michiganians—with no shenanigans."

OUR REPUBLIC—BULWARK AGAINST THE TYRANNY OF MAJORITIES

Senator Margaret Chase Smith (R., Maine)

We talk a great deal about our American government being a democracy. It is said that we fought two World Wars within a generation to "make the world safe for democracy."

Yet, do we know what we are talking about?

You may be surprised to know that our government is not a true democracy. It is a republic. If you doubt this, take a look at the Constitution. Try to find the word *democracy* or *democratic*. Then take a look at Article IV, Section 4, which says, "The United States shall guarantee to every State in this Union a Republican Form of Government. . . ."

If you read the first ten amendments to the Constitution, these amendments being more popularly recognized as "The Bill of Rights," you will see that they directly flout the theory of democracy.

Now what is the difference between a democracy and a republic—what are we instead of what some of us think we are?

A democracy is a truly representative government in which the supreme power is retained by the people and exercised by them. So is a republic. But a republic, such as ours, is a restricted and limited democracy.

The basic distinction between democracy and republic is in the degree of majority rule. Majority rule is unrestricted in a democracy while it is restricted in a republic.

"The Bill of Rights" part of our Constitution places definite limitations on the power of the representatives of the people. They are denied the power to abridge our freedom of speech, right of assembly, press, trial by jury, against unreasonable searches and seizures, and other individual rights —regardless of how much the majority might be opposed to such individual rights. Under a pure or true democracy, there is no protection of such individual rights against the rule of the majority.

Democracy actually means unrestricted majority rule that our Constitution so carefully prohibits. We are inclined to think of democracy in the social sense rather than the political sense. We think of it as signifying equality among human beings. This ideal we do find expressed in the Declaration of Independence with the statement that "all men are created equal." But the ideal is even more basic than the Declaration of Independence. It is in reality the Christian concept of the Golden Rule.

So that there is good reason to distinguish between democracy and political democracy. By the sheer unrestricted rule of the majority of a political democracy, social democracy could be killed without any protection whatsoever to the minorities.

A republic is a truly representative government. It provides representation for the minority as well as the majority. It places individual freedom and rights above majority rule. If we were really a political democracy, instead of the republic we are, the will of the majority would habitually ride roughshod over the will of the minority. A republic creates and develops tolerance that acts as a bulwark against tyranny by the majority.

The United States Senate, in which I have the honor to serve, is striking proof that our government is not a democracy but a republic. New York with a population of several million people has no more representation in the Senate than my State of Maine which has a population of less than a million people. Both states have two Senators each. This is a check against unlimited majority rule for the protection of the "minority population" states.

In short, a republic rather than a democracy is the American way simply because this country was settled and founded upon the love for liberty and individual freedom. Our republic protects our very rights to our beliefs even though we are in the minority. It protects differences of opinion.

These are five of the seven new officers of the Black Hawk County Medical Auxiliary. Standing, from the left, are Mrs. L. J. Henderson, president, and Mrs. Lewis Zager, first vice-president. Seated, from the left, are Mrs. Galen Boller, corresponding secretary; Mrs. Thomas Updegraff, treasurer; and Mrs. Vernon Plager, president-elect. Mrs. Fred Sloan, second vice-president, and Mrs. Arthur Devine, recording secretary, are not shown.

THANKS FOR THE LEPROSY DRUGS

A few weeks ago, Mrs. Charlotte From, chairman of the Leprosy Relief Fund Project of the Polk County Medical Auxiliary, received a letter of thanks from Mr. Adam W. Aitken, vice-president of the Leprosy Relief Fund, in Bangkok, Thailand, for the shipment of drugs that Iowa Auxiliary members had sent. His letter, dated May 17, was as follows:

DEAR MRS. FROM:

Many thanks indeed for the supplies of drugs which arrived in good condition 3 weeks ago.

It is certainly wonderful of your organization to consider the work which we are doing here worthy of your assistance and to help us to in turn help the various hospitals which are working with the victims of leprosy.

The drugs which you sent have been delivered to Dr. A. J. Gurtler of the Overseas Missionary Fellowship for use in three institutions operated by his organization in Manarom, Chainat; in Wiset, Antong and in Saiburi, Yala. A total of 1,200 leprosy patients are receiving treatment at these clinics and I am sure that this shipment will do much to ease the budget problems with which institutions of this kind are always faced while, at the same time, it will do equally much to raise the spirits of not only the patients but also of those who fight the disease in the remotest areas of this country.

On behalf of the President and the Board of Directors of our organization, I wish to extend our appreciation and thanks to you and your group for the response to our appeal.

With kindest personal regards,

Yours sincerely,
ADAM W. AITKEN

OREGON DOCTOR'S WIFE IS A LEGISLATOR

Doctors' wives have an important contribution to make to the civic and political life of their communities, and an increasing number are taking those responsibilities seriously. Few, however, have achieved the political stature of a doctor's wife from Portland, Oregon, Mrs. E. G. Chuinard, the only freshman woman legislator in the Oregon State Legislature. As the wife of a prominent orthopedic physician and surgeon, Mrs. Chuinard is well acquainted with many of the problems and aims of the health professions, and has a particular interest in furthering medical research in her state.

As a former member of the Multnomah County Planning Commission for more than five years before winning a seat in the State Legislature on the Republican ticket last November, Mrs. Chuinard has had some experience in civic affairs. Her committee assignments in the legislature include education, public health and welfare, and local government. She is already sponsoring three bills which pertain to physicians, and two of those three are designed to further medical research.

In private life she has been, at various times, a high school teacher, a social worker and an officer in the American Association of University Women and the state and local Parent-Teacher Associations. Her husband is proud of his wife's accomplishments, and says, "She has qualifications for a good legislator."

COUNTY AUXILIARIES

Boone

The first Carolyn Porter Carlson Memorial Award was presented at Boone High School in May to Miss Sandra Burke, who will enter Iowa Lutheran Hospital School of Nursing, in Des Moines, next September. The award was established by Mr. Joel E. Carlson in memory of his wife, who was school nurse in Boone for 33 years and was instrumental in establishing the Future Nurses Club there in 1952, with the assistance of the Boone County Medical Auxiliary.

The cash award will be given annually to a senior girl, selected by a committee, who has a high scholastic standing, has been active in the Future Nurses Club, has been accepted by an approved school of nursing, and displays the qualifications necessary for the profession of nursing.

There will always be a representative of the Boone County Medical Auxiliary on the selection committee.

Mrs. H. W. Longworth, a member of the State Auxiliary's Health Educational Loan Fund Committee, made the presentation this year.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

President—Mrs. B. F. Kilgore, 5434 Woodland, Des Moines 12
President-Elect—Mrs. E. B. Dawson, 227 South 12th Street, Fort Dodge
Recording Secretary—Mrs. F. L. Poepsel, West Point
Corresponding Secretary—Mrs. N. W. Irving, Jr., 4916 Harwood Drive, Des Moines 12
Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12
Editor of THE NEWS—Mrs. Herbert Shulman, 101 Martin Road, Waterloo

MINUTES OF THE 1961 SESSIONS OF THE HOUSE OF DELEGATES

Iowa State Medical Society
Des Moines, Iowa—April 23-26, 1961

(Alphabetical Index to the Minutes Can Be Found on Page 489)

SUNDAY SESSION, APRIL 23, 1961

The House of Delegates of the Iowa State Medical Society was called to order by the speaker, Dr. C. V. Edwards, Sr., of Council Bluffs, at 10:00 a.m., Sunday, April 23. The House of Delegates approved the taking of attendance by signed registration cards. There were 117 delegates, 7 voting alternates and 22 ex-officio members present.

County	*Delegate*	*Alternate*
Adair	A. J. Gantz	
Adams	J. C. Nolan	
Allamakee	A. F. Wiley	
Appanoose	E. A. Larsen	
Audubon		
Benton	J. E. Blumgren	
Black Hawk	C. D. Ellyson	
	T. L. Trunnell	
	R. C. Miller	
	F. G. Loomis	
	G. D. Phelps	
Boone	R. L. Wicks	
Bremer	V. H. Carstensen	
Buchanan	R. L. Knipfer	
Buena Vista	H. E. Farnsworth	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	P. T. Cawley	
Cass	E. M. Juel	
Cedar		
Cerro Gordo		F. W. Saul
	J. W. Lannon	
	H. W. Morgan	
Cherokee	D. C. Koser	
Chickasaw	P. C. Richmond	
Clarke	G. I. Armitage	
Clay	D. H. King	
Clayton		
Clinton	H. A. Amesbury	
	M. E. Barrent	
Crawford	A. H. Grau	
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	P. T. Meyers	
Decatur	E. E. Gamet	
Delaware	R. E. Clark	
Des Moines	F. G. Ober	
	F. H. Coulson	
Dickinson	E. L. Johnson	
Dubuque	D. F. Ward	
	R. J. McNamara	
	L. P. Alt	
Emmet	H. A. Lindholm	
Fayette	R. S. Jaggard	
Floyd		
Franklin	R. E. Munns	
Fremont		
Greene	R. E. Jongewaard	
Grundy		
Hamilton	G. A. Paschal	
Hancock-Winnebago		
Hardin	J. J. Shurts	
Harrison	J. W. Barnes	
Henry		
Howard	P. F. Kepros	
Humboldt	I. T. Schultz	
Ida	R. E. Underriner	
Iowa		
Jackson		
Jasper	R. F. Frech	
Jefferson	K. H. Strong	
Johnson	A. C. Wise	
	W. M. Kirkendall	
	K. R. Cross	
	C. E. Schrock	C. R. Eicher
	T. T. Bozek	
	J. M. Layton	
	R. H. Flocks	
Jones	L. D. Caraway	
Keokuk	R. G. Gillett	
Kossuth		
Lee	L. C. Pumphrey	
	G. C. McGinnis	
Linn	J. J. Keith	
	J. J. Redmond	
	L. J. Halpin	
	J. T. Hecker	C. R. Aschoff
Louisa	L. E. Weber, Jr.	
Lucas		H. D. Jarvis
Lyon	G. D. Bullock	
Madison		
Mahaska	F. O. W. Voigt	
Marion	D. A. Mater	
Marshall	O. D. Wolfe	
	L. O. Goodman	
Mills	M. L. Scheffel	
Mitchell		
Monona		
Monroe		
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien	J. C. Peterson	
Osceola		
Page	W. G. Kuehn	
Palo Alto	C. C. Moore	
Plymouth	J. P. Trotzig	
Pocahontas	J. M. Rhodes	
Polk	D. F. Crowley	
	E. T. Burke	
	R. A. Dorner (Chm.)	
	B. C. Barnes	
	D. O. Newland	
	R. B. Stickler	
	M. E. Alberts	
	J. T. Bakody	
	S. J. Zoeckler	
	J. E. Gustafson	
	P. K. Hughes	
	N. W. Irving	
Pottawattamie	H. W. Mathiasen	
	F. N. Weber	
	F. E. Marsh, Jr.	
Poweshiek		S. D. Porter
Ringgold		
Sac	J. W. Gauger	
Scott	J. H. Sunderbruch	
	P. E. Gibson	
	R. P. Lagoni	
	J. F. Bishop	
Shelby	R. E. Donlin	
Sioux	M. O. Larson	
Story	G. E. Montgomery	
	J. D. Conner	
Tama	C. W. Maplethorpe	
Taylor	R. W. Boulden	
Union	H. J. Peggs	
Van Buren		K. Furumoto
Wapello	K. E. Lister	
Warren	Amalgamated with Polk	
Washington	G. J. Nemmers	
Wayne	C. N. Hyatt	
Webster		J. F. Collins
	R. W. Lee	
Winneshiek	R. M. Dahlquist	
Woodbury	H. E. Rudersdorf	
	J. W. Bushnell	
	P. M. Cmeyla	

County	Delegate	Alternate
Worth	B. H. Osten	
Wright	C. P. Hawkins	

DELEGATE AT LARGE
J. W. Billingsley

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

E. F. Van Epps	C. E. Radcliffe
O. N. Glesne	G. S. Atkinson
V. W. Petersen	L. V. Larsen
R. F. Birge	L. W. Swanson
H. J. Smith	C. H. Stark
G. H. Scanlon	C. V. Edwards, Sr.
S. P. Leinbach	J. T. McMillan
J. E. Houlahan	Fred Sternagel
M. A. Blackstone	W. D. Abbott
G. E. McFarland, Jr.	W. L. Downing
C. W. Seibert	N. B. Nelson

Minutes of the April 27, 1960, meeting of the House of Delegates were approved as published in the July, 1960, JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Reports as published in the 1961 HANDBOOK FOR THE HOUSE OF DELEGATES were approved, except for the report of the Blue Shield Utilization and Fee Committee which was referred to the Reference Committee on Insurance and Medical Service for study and report.

Reports of Officers

FROM THE OFFICE OF THE SECRETARY

The activities of the Iowa State Medical Society increase from year to year, not entirely by the choice of the officers and other members, but primarily out of necessity. Prior to the Annual Meeting, the Board of Trustees expects to transmit a report to the full membership on the broad activities of the Society, and thus this HANDBOOK report will deal more specifically with the responsibilities of the secretary.

These responsibilities include maintaining membership and dues records; conducting the official correspondence; and notifying members of meetings, officers of their election, and committee members of their appointments and duties. The secretary is also responsible for preparing minutes of all official meetings of the Society. Insofar as it is in his power, he uses the printed matter, correspondence and influence of his office to aid the councilors in organizing and improving the component societies, and in extending the power and usefulness of the Society.

The following accounts for the work of the secretary during the past year:

Annual Meeting. The 1961 Annual Meeting Program has appeared in the March issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, and hand programs will be distributed at the time of the meeting.

House of Delegates. The proceedings of the 1960 session of the House of Delegates were published in the July, 1960, JOURNAL.

Meetings. Since the last Annual Meeting, there have been 118 official meetings: 6 meetings of the Executive Council; 6 meetings of the Judicial Council; 8 meetings of the Board of Trustees; and 98 committee meetings. These do not include informal conferences of various types with committee chairmen, individual committee members, officers, etc.

In each instance, the physicians involved have been duly notified, and minutes recording the actions taken have been properly distributed. In addition, special bulletins for deputy councilors have been prepared for their use in reporting to county medical societies.

The secretary has conducted official correspondence in connection with the business of the House of Delegates, the Executive and Judicial Councils, the Board of Trustees and the committees.

General Mailings. Membership mailings during the year included: 15 general News Bulletins, with a number of special enclosures; 5 Legislative News Bulletins; 3 mailings to legislative contact men; and 6 Newsletters to deputy councilors.

The JOURNAL is relied upon to transmit general information to the membership.

ISMS MEMBERSHIPS

Memberships in the Iowa State Medical Society during the year 1960 increased to 2,461 as compared to 2,438 for the two preceding years. There were 66 counties in which 100 per cent of the county society members held membership in the ISMS, representing a slight decrease from 1959. In 1960 there were 57 eligible non-members as compared with 55 in 1959. The number of ineligible non-members decreased from 52 in 1959 to 39 in 1960. Physicians retired or not in practice decreased from 105 in 1959 to 97 in 1960. The total membership percentage in 1960 remains at 98.

COUNTY SOCIETIES HAVING 100 PER CENT MEMBERSHIP IN ISMS IN 1960

Adams	Henry	Palo Alto
Allamakee	Howard	Plymouth
Boone	Humboldt	Pocahontas
Butler	Ida	Polk
Calhoun	Iowa	Pottawattamie
Carroll	Jackson	Ringgold
Cerro Gordo	Jefferson	Sac
Chickasaw	Kossuth	Scott
Clarke	Lee	Shelby
Clay	Lucas	Sioux
Crawford	Lyon	Story
Dallas-Guthrie	Madison	Tama
Davis	Mahaska	Taylor
Delaware	Marshall	Union
Des Moines	Mills	Van Buren
Dickinson	Monona	Wapello
Franklin	Monroe	Warren
Greene	Montgomery	Washington
Grundy	Muscatine	Wayne
Hamilton	O'Brien	Webster
Hardin	Osceola	Winneshiek
Harrison	Page	Wright

1960 ISMS MEMBERSHIP RECORD

County	Active Members	Associate Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage
Adair	3	1	1	..	..	80
Adams	4	..	..	..	..	100
Allamakee	7	..	..	..	2	100
Appanoose	11	..	2	..	2	85
Audubon	4	..	1	..	1	80
Benton	16	..	1	..	..	94
Black Hawk	115	..	2	..	..	98
Boone	16	1	..	..	..	100
Bremer	17	..	1	..	..	94
Buchanan	15	..	1	3	1	94
Buena Vista	13	1	1	..	..	93
Butler	8	..	..	..	..	100
Calhoun	11	..	..	..	1	100

County	Active Members	Associate Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage
Carroll	22	1	..	..	..	100
Cass	10	..	3	..	..	77
Cedar	8	..	1	..	..	89
Cerro Gordo	67	1	..	..	..	100
Cherokee	25	..	1	8	1	96
Chickasaw	12	..	..	..	..	100
Clarke	6	..	..	..	..	100
Clay	13	..	..	..	..	100
Clayton	8	1	2	..	..	82
Clinton	48	1	3	2	..	94
Crawford	7	..	..	..	..	100
Dallas-Guthrie	26	..	..	4	..	100
Davis	14	..	..	..	..	100
Decatur	6	..	1	..	1	86
Delaware	10	..	..	..	1	100
Des Moines	45	1	..	..	..	100
Dickinson	9	..	..	..	..	100
Dubuque	71	3	1	..	1	99
Emmet	16	..	1	..	..	94
Fayette	20	1	2	..	1	91
Floyd	17	..	1	..	..	94
Franklin	8	..	..	..	..	100
Fremont	6	..	1	..	..	86
Greene	17	..	..	..	1	100
Grundy	9	..	..	..	..	100
Hamilton	13	1	..	1	..	100
Hancock-Winnebago	15	..	1	1	1	94
Hardin	19	1	..	..	..	100
Harrison	8	..	..	..	3	100
Henry	19	..	..	5	1	100
Howard	8	..	..	..	..	100
Humboldt	7	1	..	..	..	100
Ida	6	..	..	..	2	100
Iowa	14	..	..	..	..	100
Jackson	12	..	..	..	..	100
Jasper	21	..	1	1	..	95
Jefferson	11	..	..	..	1	100
Johnson	195	3	8	..	5	96
Jones	14	..	2	..	..	88
Keokuk	6	..	1	..	..	86
Kossuth	12	..	..	..	2	100
Lee	39	..	..	..	1	100
Linn	126	5	4	1	5	97
Louisa	3	..	2	..	..	60
Lucas	6	..	..	..	..	100
Lyon	7	..	..	..	..	100
Madison	7	..	..	..	..	100
Mahaska	18	1	..	..	..	100
Marion	18	..	4	..	3	82
Marshall	38	..	..	..	..	100
Mills	5	..	..	3	2	100
Mitchell	10	..	2	..	1	83
Monona	10	..	..	..	1	100
Monroe	6	1	..	..	..	100
Montgomery	13	..	..	..	..	100
Muscatine	20	..	..	1	1	100
O'Brien	13	1	..	..	..	100
Osceola	4	..	..	..	..	100
Page	22	1	..	4	1	100
Palo Alto	9	..	..	..	..	100
Plymouth	11	..	..	..	2	100
Pocahontas	8	..	..	1	1	100
Polk	311	17	..	2	22	100
Pottawattamie	72	..	..	1	6	100
Poweshiek	11	..	2	..	..	85
Ringgold	5	..	..	..	..	100
Sac	9	..	..	..	..	100
Scott	104	..	..	..	4	100
Shelby	8	..	..	..	3	100
Sioux	11	..	..	..	1	100
Story	47	1	..	..	1	100
Tama	12	..	..	..	..	100
Taylor	3	..	..	..	..	100
Union	16	..	..	..	..	100
Van Buren	3	..	..	..	..	100
Wapello	53	..	..	..	..	100
Warren	7	1	..	..	2	100
Washington	12	..	..	..	2	100
Wayne	6	..	..	..	..	100
Webster	56	..	..	..	2	100
Winneshiek	10	..	..	..	1	100
Woodbury	120	1	2	2	6	98
Worth	4	..	1	..	..	80
Wright	20	1	..	..	1	100
	2,413	48	57	39	97	98

AMA MEMBERSHIP

The members of the Iowa State Medical Society who were active members of the American Medical Association in 1960 numbered 2,363 (includes active dues-exempt because of life membership, residency or military service). In addition 48 held associate memberships and 6 held service memberships (in Veterans Administration) in the AMA.

The 2,363 active AMA memberships in 1960 entitled us to three AMA delegates. Our 1960 AMA membership was 96.7 per cent of the total Iowa State Medical Society membership.

R. F. BIRGE, M.D., *Secretary*

REPORT OF THE TREASURER

As can be noted from the following financial statements, the Iowa State Medical Society, in 1960, has experienced a slight increase in net worth. Income was sufficient to meet all the costs of the ever-increasing Society activities, and made possible a small addition to the Society's reserves.

The Baldridge-Beye Memorial Fund, in the amount of $3,248.00, was contributed to the American Medical Education Foundation, earmarked for the State University of Iowa College of Medicine. The 1960 contribution consisted of $2,148.00 from the assignment of $1.00 for each dues-paying member, and $1,100.00 from repayments made on Baldridge-Beye loans during the past year.

H. J. SMITH, M.D., *Treasurer*

IOWA STATE MEDICAL SOCIETY

Balance Sheet—December 31, 1960

ASSETS

Current Assets:			
ISMS Checking Accounts		$ 1,935.97	
ISMS Savings Accounts		19,943.12	
Corporation Stock		27,782.70	
Government Bonds		57,985.16	
Medicare		5,000.00	
Notes Receivable (Baldridge-Beye)		1,378.00	
Pension Insurance Due From Employees		725.04	
Total Current Assets			$114,749.99
Fixed Assets:			
Land		$ 5,000.00	
Building	$44,822.50		
Less: Reserve for Depreciation	14,500.00	30,322.50	
Provision for Building Fund		14,500.00	
Net Fixed Assets			49,822.50
TOTAL ASSETS			$164,572.49

LIABILITIES AND NET WORTH

Liabilities:		
State Personal and Property Tax	$ 1,769.84	
Baldridge-Beye Memorial Fund: Balance 12-31-60	$ 1,378.00	
TOTAL LIABILITIES		$ 3,147.84

Net Worth:		
Balance 12-31-60	$157,432.89	
Add: Net Income 1960	3,991.76	
Total Net Worth		$161,424.65
TOTAL LIABILITIES AND NET WORTH		$164,572.49

IOWA STATE MEDICAL SOCIETY
STATEMENT OF INCOME AND EXPENSES

For the Year Ended—December 31, 1960

Income for the Year 1960:		
Dues—State Society	$169,592.50	
Dues—AMA	51,510.00	
ISMS Educational Fund	10.00	
JOURNAL Advertising	50,901.89	
JOURNAL Reprints	2,122.92	
Annual Session	13,938.00	
Medicare	6,371.89	
Miscellaneous	764.24	
Dividends—Corporation Stock	1,242.50	
Interest—Government Bonds	1,211.25	
Interest—Savings Accounts	675.04	
Interest—Notes Receivable	12.00	
AMA Collection Commission	520.00	
TOTAL INCOME		$298,872.23
Expenses for the Year 1960:		
Annual Session	$ 13,797.35	
Baldridge-Beye Memorial Fund	2,148.00	
Council	3,265.15	
County Society Services	321.43	
Depreciation—Building	4,500.00	
Dues—AMA	51,510.00	
Dues and Subscriptions	1,551.20	
General Administrative Expense	1,510.33	
Insurance	516.65	
ISMS Educational Fund	10.00	
Janitor and Cleaning Supplies	5.10	
JOURNAL—Printing and Engraving	$ 51,689.55	
JOURNAL—Reprints	3,183.85	
Legal Expense	6,000.00	
Light, Gas and Water	1,080.24	
Office Furniture and Fixtures	1,552.85	
Office Stationery and Supplies	3,902.55	
Pension Insurance	2,963.88	
Postage	4,876.34	
Repair and Maintenance	402.21	
Salaries	79,959.13	
Salaries—Outside Secretarial Service	870.63	
Service Contracts—Machines	517.30	
Taxes:		
Personal and Property	1,769.84	
Social Security	1,920.19	
Unemployment—Federal	139.50	
Unemployment—State	104.61	
Use Tax	863.96	
Telephone and Telegraph	4,049.89	
Travel—Officer	5,927.53	
Travel—Salaried Employee	11,544.75	
Trustee, Expense	1,544.93	
Woman's Auxiliary	1,369.60	
Committee Expense:		
Grievance	1,629.97	
Health Education	547.40	
Legislative	13,659.64	
Medical Education and Hospitals	160.35	
Medical Service	1,960.21	
Public Health	1,438.33	
Public Relations	5,570.83	
Other Committees	4,545.20	
TOTAL EXPENSES		$294,880.47
Net Income for 1960		3,991.76

BOARD OF TRUSTEES

In an attempt to bring complete information on business affairs of the Society to all members, the Board of Trustees plans to transmit a comprehensive analysis of Society activities to the full membership prior to the Annual Meeting. This report will include financial data, but more complete information is available to the delegates in the Treasurer's Report, which is contained in this HANDBOOK.

This accounting to the membership is deemed necessary by the Board of Trustees to acquaint physicians with the ever-increasing activities that have been initiated by the Society, as well as the great number of complex problems that must be considered and dealt with by its officers, committees, and staff.

Report of the Judicial Council

FIRST DISTRICT

The First Councilor District held a meeting of the delegates, deputy councilors and other interested physicians on November 28 at the Boot Hill Club, in West Union, to determine what action this District would recommend to the ISMS in regard to the Kerr-Mills Bill. The meeting was attended by 22 physicians, who represented all of the nine counties in the District. After much earnest discussion of the six major questions that had been posed, it was voted that the ISMS should support passage of enabling legislation in the next General Assembly. The perplexing problem of administration and control of the Aged and Vendor programs was discussed at length, and there were constant repetitions of the hope that some means can be found for adequate control of these at the county level. Most doctors sincerely believe that only then will the needs of these patients and their communities be properly met.

A new hospital in Postville was dedicated on January 29. The dedicatory address was delivered by Dr. Norman Nelson, dean of the S.U.I. College of Medicine. During the two days of open house, an estimated 3,000-4,000 people visited the hospital.

During the past year, I was able to meet with only five county medical societies in the District. These meetings were all well attended, demonstrating a tremendous interest and activity of physicians in the social and political problems that are challenging medicine today. Many individual physicians have appeared before local chambers of commerce, service clubs and other organizations to present medicine's case against socialization.

The Winneshiek County Medical Society has been scheduled to conduct a county-wide tuberculin testing

program of all grade-school children late in February, 1961.

I wish to thank all of the deputy councilors for their considerable help during the past year.

RALPH M. DAHLQUIST, M.D., *Councilor*

Deputy Councilors:
C. R. ROMINGER, M.D., Allamakee
R. E. SHAW, M.D., Bremer
M. J. MCGRANE, M.D., Chickasaw
P. R. V. HOMMEL, M.D., Clayton
A. F. GRANDINETTI, M.D., Fayette
E. V. AYERS, M.D., Floyd
P. A. NIERLING, M.D., Howard
T. E. BLONG, M.D., Mitchell
E. F. HAGEN, M.D., Winneshiek

SECOND DISTRICT

Most of the counties in the Second District carried on immunization programs, school examinations and tuberculosis surveys. In most counties, the doctors cooperated in attending school athletic contests. Cerro Gordo County had excellent monthly scientific programs that were well attended by local physicians and by doctors from surrounding counties.

This year, the Cerro Gordo County Medical Society held several dinner meetings with management, labor and professional groups so that medicine's story might be presented to them. These were well received. The outstanding one of these programs was the one at which Dr. Daniel Stone, of the S.U.I. Department of Internal Medicine and formerly a British physician himself, told of the National Health Service in his homeland. There were 92 lay guests at that meeting.

Ged Buckles, field secretary of the State Medical Society, interviewed several groups from management and also a labor group. Favorable comments have been voiced by the men whom he saw, and attempts will be made to follow up those contacts. We urge other areas to adopt similar programs.

JAY E. HOULAHAN, M.D., *Councilor*

Deputy Councilors:
F. F. MCKEAN, M.D., Butler
H. G. MARINOS, M.D., Cerro Gordo
W. L. RANDALL, M.D., Franklin
T. J. IRISH, M.D., Hancock-Winnebago
I. T. SCHULTZ, M.D., Humboldt
M. G. BOURNE, M.D., Kossuth
CHARLES BERGEN, M.D., Worth
S. P. LEINBACH, M.D., Wright

THIRD DISTRICT

At the 1960 Annual Meeting, a physician from the Third District, Dr. G. H. Keeney, of Mallard, in Palo Alto County, was chosen as Iowa General Practitioner of the Year, a distinction heartily endorsed by all of his acquaintances. During the year, which is considered to have started with that event, the component societies of the District have shown, through certain interested members, a desire to make themselves into a more cohesive and influential unit in organized medicine, as had been promised in the 1959 report. Combined meetings of deputy councilors, delegates and interested individual members have served as means to this end.

Business and scientific meetings, both of the county societies and of larger groups, have offered the doctors of the District a wealth of opportunities to enhance their professional knowledge. These meetings, I believe, have been well attended.

The doctors of Dickinson County, located in one of Iowa's summer vacation areas, performed examinations on some 12,000 children who attended the Prairie Gold Scout Camp, at Lake Okoboji, thus rendering considerable benefit to the public relations of the profession. In addition, they examined the personnel of the American Red Cross Aquatic School at Okoboji. Dr. Donald F. Rodawig, Sr., a member of the ISMS Grievance Committee, was chosen by the Spirit Lake Kiwanis Club as its 1960 Citizen of the Year.

Dr. J. D. Brower, of Lyon County, completed his tour of active military duty during the past year, but then went into private practice in California, instead of returning to his previous location in Rock Rapids. Clay County obtained a new member, Dr. Richard A. Wood, who started general practice at Peterson, where there had been no doctor for several years. The Osceola County Medical Society reports that 100 per cent of its members also belong to the American Academy of General Practice. The community hospital at Hartley, in O'Brien County, is now activated, and a new Osceola Community Hospital is apparently assured at Sibley. These will further augment the modern hospital facilities already available throughout the Third District.

The membership of the Palo Alto County Medical Society declined rather precipitously during the year—from 12 to 9—when Drs. Meany and Menkin left West Bend and went to practice in Minneapolis, and when Dr. Robert Dawson, of Graettinger, decided to affiliate with Emmet County. Now, seven of the nine Palo Alto County doctors live in Emmetsburg. The Palo Alto County Medical Society and the medical staff of the Palo Alto Memorial Hospital hold meetings alternately during eight months of the year. A county-wide immunization program was carried out last fall. In some instances Emmetsburg doctors visited doctorless towns for this purpose, and in others the children from outlying districts were brought to Emmetsburg by school bus for their immunizations. The Palo Alto County Society recently voted to buy the antidote cabinet recommended by the State Board of Health, and the local pharmacists agreed to invoice it occasionally and to replenish the supplies of antidotes as they are used up. Thus, the County will have a poison control center.

Clinics of the Iowa State Services for Crippled Children have been held in Spencer, Spirit Lake and Sheldon, and have been very well attended, even to the extent that the Spencer clinic had to be extended to a second day. The preceptor program of the ISMS and the S.U.I. College of Medicine has been well supported by the doctors of this District.

The chapters of the Woman's Auxiliary in this District remain active in their helpful projects. They sponsored a Third District Summer Meeting at Lake Okoboji.

DEAN H. KING, M.D., *Councilor*

Deputy Councilors:
C. C. JONES, M.D., Clay
E. L. JOHNSON, M.D., Dickinson
R. L. COX, M.D., Emmet
STUART COOK, M.D., Lyon
E. B. GETTY, M.D., O'Brien
F. B. O'LEARY, M.D., Osceola
H. L. BRERETON, M.D., Palo Alto
J. M. RHODES, M.D., Pocahontas
M. O. LARSON, M.D., Sioux

FOURTH DISTRICT

As the Fourth District councilor for the past three years, there are certain observations that I have made. There are members who do a good job, regardless of what is asked of them. The continued lack of interest shown by a large part of the membership may stem from the failure on the part of the officers to put across the problems as we see them. Probably a type of fatalism is more important—the assumption that we have no control over our destinies, medically speaking. Honest differences of opinion are always welcome in any progressive organization, and they must be considered and utilized.

My sincere thanks for the opportunity to have served as your councilor, and thanks especially to the delegates and deputy councilors for their good cooperation.

M. A. BLACKSTONE, M.D., *Councilor*

Deputy Councilors:
R. R. HANSEN, M.D., Buena Vista
JAMES TIERNEY, M.D., Carroll
H. J. FISHMAN, M.D., Cherokee
R. A. HUBER, M.D., Crawford
J. B. DRESSLER, M.D., Ida
L. A. GAUKEL, M.D., Monona
R. L. FISCH, M.D., Plymouth
J. W. GAUGER, M.D., Sac
D. B. BLUME, M.D., Woodbury

FIFTH DISTRICT

County medical society activity in the Fifth District during the past year has been highlighted by intense interest in the election campaign. It has been heartening to see physicians take a more active part than formerly in the selection and election of candidates whose beliefs and platforms can be supported by organized medicine. The continuation of such interest is essential.

All of the county societies of the Fifth District held regular scientific meetings during the past year. Webster County, in cooperation with the Iowa State Medical Society, presented an excellent postgraduate medical education course on Thursday, December 1, 1960. Calhoun County is continuing its excellent public relations program, with regular releases to the press and cash awards to outstanding students in each of six high schools.

The combined Boone-Story Society has held regular scientific meetings, with good attendance. Story County hospital facilities will be considerably improved next September, on the completion of a $1,800,000 addition to Mary Greeley Hospital, in Ames.

The Dallas-Guthrie Society reports excellent attendance at its scientific meetings, and an active Auxiliary.

Hamilton County reports the loss of Dr. W. B. McGahey, who has been very active in State Society affairs, and has been a deputy councilor. He moved to Scottsdale, Arizona, and his replacement as deputy councilor is Dr. George A. Paschal.

The Polk County Medical Society, through its many committees and its liaison with other community organizations in Des Moines, continues to be alert to the many demands, opportunities and responsibilities given to doctors in a metropolitan area. The Society's total membership was slightly less than at the start of 1960, but the number of its members reported to the Iowa State Medical Society was 331, the largest in its history. All eligible doctors of medicine are members of the Society. The operating budget of the Society was slightly less than the $35,000 expended in 1960.

The Polk County Society continues to strive for the best available medical care for patients at Broadlawns Hospital, where many of its members serve as staff members. Recommendations of a Dean's Committee regarding innovations in medical training at Broadlawns have been temporarily deferred.

Efforts at orienting members to the procedures and provisions of the Vendor Payment Program, and efforts to reconcile the welfare aspects with private practice have required a great amount of time from a greatly concerned advisory committee. Some service plans for care of the aging, other than the usual medical care, have been delayed pending action by other social service groups essential to the service. Representatives of the Society attended two conferences on aging during the year, and several members spoke on the subject before interested groups.

Although so-called public relations are an everyday and routine part of the Society's activities, the Committee on Public Relations and Education developed or participated in some special projects during the year. It became imperative, early in the year, to take a firm and aggressive position on maintaining the availability of animals for research purposes. With the Register and Tribune Company as a co-sponsor, the Society presented its annual public forum on the timely subject "How to Enjoy Your Later Years More." Progress is being made toward the development of "Future Doctors" clubs in the Des Moines schools. Negotiations are under way for a regular schedule of educational television programs beginning in the fall of 1961. The specially-built exhibit of Polk County Medical Society activities was shown on three occasions during the year. The Society gave financial support to the Hawkeye Science Fair, the Legislative Ladies Tea, the Foreign Student Program, and the Auxiliary's essay contest. The Society is happy to cooperate with the fine local chapter of the Medical Assistants Association.

The Preschool Health Program in Polk County continues to gain momentum. A good proportion of medical society members participate in this educational and medical service project. Kindergarten children in the town and in the consolidated and rural schools of the County attained their highest percentage of examinees, this past year. The figures for the Des Moines schools were only slightly lower than last year's high. Most children have received their inoculations. It is apparent, however, that fewer children are receiving smallpox vaccinations.

Polk County physicians gave more generously as a group and on the average to the community charities through the United Campaign, even though they failed narrowly to meet the quota assigned them. Several physicians give generously of their time and money to organizations of special interest to them.

The Polk County Society's Mediation Committee handled only 10 complaints during the year, and apparently did so to the mutual satisfaction of defendants and plaintiffs. Its Advisory Committee to the Public Health Department had an active year, and made important contributions to the Department's work.

With the adoption, in January, 1961, of the Polk County Medical Society's Articles of Reincorporation

and By-Laws, the Polk and Warren County Medical Societies were amalgamated as the Polk County Medical Society.

I wish to thank the deputy councilors of this District for their cooperation and assistance during the past year.

G. E. McFARLAND, JR., M.D., *Councilor*

Deputy Councilors:
RALPH L. WICKS, M.D., Boone
GLENN S. ROST, M.D., Calhoun
ALLAN G. FELTER, M.D., Dallas
ELVIN D. THOMPSON, M.D., Greene
WM. A. SEIDLER, JR., M.D., Guthrie
GEORGE A. PASCHAL, M.D., Hamilton
JOHN G. THOMSEN, M.D., Polk
JOHN D. CONNER, M.D., Story
CHARLES J. BAKER, M.D., Webster

SIXTH DISTRICT

Regular meetings were held by all of the county societies of the Sixth Councilor District during the past year. These, in the main, were scientific in nature, although several of the counties devoted one meeting each to entertaining the doctors' wives at dinner. The Tama County Medical Society and the Tama County Bar Association, and the doctors' and lawyers' wives, had dinner together and heard Monsignor M. G. Schwarte, president of Dowling High School, Des Moines, speak on the subject "Colonialization of the Sub-Sahara." That meeting was the third of its type to be held in Tama County, and the members of the Tama Medical Society are most enthusiastic about it. I feel that this type of thing is an excellent public relations gesture, and recommend it to all of the other county societies.

Hospital expansion and building have continued throughout the Sixth District. Mercy Hospital, Marshalltown, is well started on its new building project, the completion of which is scheduled for early in 1962. Recently, the Evangelical Hospital, Marshalltown, began a fund drive for a new $3 million medical center. In addition to hospital building, the construction of new doctors' offices has progressed. Among those opened during the past year are the Wolfe Eye Clinic and another structure housing six physicians, both in Marshalltown. At Waterloo, the Surgical and Orthopedics Associates opened a new office building housing five physicians and having approximately 3,000 square feet of floor space on the first floor. In addition, the Waterloo Surgical and Medical Group moved into a new building housing six physicians and having over 4,000 square feet of floor space on the first floor. Thus, the trend of decentralization by professional men seems to be continuing.

On October 20, 1960, the Black Hawk County Medical Society sponsored a one-day clinical meeting known as the Northeast Iowa Clinical Conference. The speakers on the program were all nationally known and gave excellent presentations on a wide range of clinical subjects. This meeting was well attended, and was accepted with much enthusiasm. The Conference was the brain-child of Dr. Wade O. Preece, of Waterloo, and to him goes the lion's share of credit for its success. It is hoped that it will now become an annual affair.

Several of the county societies have Auxiliaries. The Black Hawk County Medical Auxiliary has been particularly active during the past year. Under the leadership of Mrs. William Telfer, president, and with the cooperation of the Lionels, the Delta Gamma Alumni and the Junior Service League, a program of visual screening of preschool children has been carried out. Seventeen hundred of these youngsters have been screened, and 17 of them have been referred for significant eye abnormalities. In addition, the Black Hawk County Medical Auxiliary annually presents the "Medicine Ball," a semi-formal dinner dance. Entertainment in the form of a humorous skit is put on by the members and their husbands. Proceeds go to some worthy county-wide medical project. This has become a very successful affair, and is now one of the winter social highlights in Waterloo.

C. W. SEIBERT, M.D., *Councilor*

Deputy Councilors:
N. C. KNOSP, M.D., Benton
C. D. ELLYSON, M.D., Black Hawk
A. E. REEDHOLM, M.D., Grundy
L. F. PARKER, M.D., Hardin
C. F. WATTS, M.D., Iowa
J. W. FERGUSON, M.D., Jasper
R. C. CARPENTER, M.D., Marshall
S. D. PORTER, M.D., Poweshiek
A. J. HAVLIK, M.D., Tama

SEVENTH DISTRICT

The Seventh Councilor District of the Iowa State Medical Society is composed of the following counties: Buchanan, Cedar, Clinton, Delaware, Dubuque, Jackson, Johnson, Jones and Linn. During 1960, the medical societies in the larger ones of those counties had scientific meetings during the usual nine months of the year, and varied instructive programs were presented at them. The smaller county societies held fewer meetings, but many of their members attended the sessions of the societies in the larger adjacent counties.

Members of the Buchanan County Medical Society work closely with the staff of the Mental Health Institute at Independence, and many of them attended a two-day refresher course in psychiatry for the general physician which was held at the Institute this year. The resident physicians there are also working at People's Hospital, Independence, gaining experience in psychosomatic medicine as it is seen in a general hospital. The members of the Buchanan County Society were also active in solving civic lay-medical problems.

The Cedar County Medical Society held joint meetings with the Dental Society which were of mutual informative value and also aided in promoting good interprofessional relations.

The Clinton County Medical Society has continued to support the local civic programs concerned with public health, and the biweekly tumor conferences have continued at Clinton, as in the past.

Delaware County Medical Society has continued to support local and regional health programs. Its members have done free medical examinations, and have furthered medical public relations by continuing their emergency-call service.

The Dubuque County Medical Auxiliary has sponsored a Mardi Gras Ball, in February, to help finance its nurse scholarship fund, and currently it is offering two nursing scholarships annually from the money thus obtained. The Ball has been held each year since

1955. The Auxiliary has also helped in the sale of handicapped workers' products.

The Dubuque County Medical Society, during the past year, lost a beloved member, Dr. Edward Bartels, who was killed in the performance of his duty as a physician. The Society has set up an educational fund in his name. At a recent ceremony, the State Medical Society, represented by its president, Dr. Eugene Van Epps, presented Mrs. Ruth Bartels with an award commending her husband, posthumously, for his devotion to the care of his patients.

The Jackson County Medical Society has cooperated passively with the Vendor Payment Program, and generally this course of action has worked out to the mutual satisfaction of the parties concerned. The members of the Jackson County Society have also been working on a long-range project to complete a history of their organization, and it is planned that this task will be completed in the spring of 1961.

The Johnson County Medical Society has gone ahead with its usual support of local health care projects, and various members of the Society have been active in local, state and national medical programs. By welcoming large numbers of internes and residents to its membership, the Society has helped to show these young doctors the benefits of organized medicine.

The doctors of Jones County have been active throughout the past year in supporting the diabetes detection program and other school health projects. Like the other Societies in the Seventh District, the Jones County physicians worked to elect able and qualified legislators for state and national posts in the fall of 1960.

In Linn County, the doctors have had their usual excellent group of speakers throughout the year, and have a 100-per cent membership of eligible physicians in their County Medical Society. In addition, the Society this year has produced three television programs of the medical-forum type, which have been broadcast over two channels with wide coverage in this part of the state. The presentations were on timely topics, and were well received and enjoyed. Another good step in public relations and timely information for the public!

I wish to thank the deputy councilors for their invaluable help throughout the year in forwarding information to their respective county societies regarding the many problems which the State Medical Society has encountered.

CHRISTIAN E. RADCLIFFE, M.D., *Councilor*

Deputy Councilors:
PAUL J. LEEHEY, M.D., Buchanan
H. E. O'NEAL, M.D., Cedar
VERNON W. PETERSEN, M.D., Clinton
R. E. CLARK, M.D., Delaware
ROBERT J. MCNAMARA, M.D., Dubuque
L. B. WILLIAMS, M.D., Jackson
LOUIS JACQUES, M.D., Johnson
L. D. CARAWAY, M.D., Jones
HARRY J. JONES, M.D., Linn

EIGHTH DISTRICT

The doctors in the Eighth Councilor District are not controversial at this writing.

All of the county medical societies are functioning well, holding their regular scientific meetings, and helping to keep their hospitals in regulatory order.

Many of the men have been very active in the fight for free enterprise, and the District meeting held at Burlington regarding the welfare program for the aged was extremely provocative. It can be said that the doctors in our district have gone down fighting, but will try to hold the line at all times.

There is a very definite interest in Social Security for doctors among many of the physicians in this District, especially since the change in the welfare picture.

The deputy councilors and their constituents are to be congratulated for their unabated interest in organized medicine.

J. H. SUNDERBRUCH, M.D., *Councilor*

Deputy Councilors:
J. F. FOSS, M.D., Des Moines
J. S. JACKSON, M.D., Henry
J. W. CASTELL, M.D., Jefferson
G. H. ASHLINE, M.D., Lee
G. C. MCGINNIS, M.D., Lee
E. S. GROBEN, M.D., Louisa
K. E. WILCOX, M.D., Muscatine
ERLING LARSON, M.D., Scott
KIYOSHI FUROMOTO, M.D., Van Buren
G. E. MONTGOMERY, M.D., Washington

NINTH DISTRICT

Regular scientific meetings were held throughout the past year by the medical societies in Appanoose, Davis, Lucas, Mahaska and Wapello Counties. The medical societies in Keokuk, Marion, Monroe and Wayne Counties held them less frequently than once a month.

The Appanoose County organization continued its school health program and cooperated with the Southeast Iowa Tuberculosis Program. In Keokuk County, the medical society appointed a delegation to support fluoridation of the Sigourney water supply, and accomplished its objective. The October meeting of the Mahaska County Medical Society was devoted to the presentations of candidates for the state legislature. Candidates of both political parties were invited to speak. The Mahaska County doctors also cooperated with the Cancer Society, the TB and Heart Associations, and the Crippled Children's Clinic. The Marion County Medical Society participated in the polio vaccination program. In Wapello County, the medical society continues to approve of and cooperate with the Tumor Clinic, and to support the operation of the Southeast Iowa Blood Bank.

I want to take this opportunity to thank the deputy councilors, and the officers and members of the county societies, for their cooperation during the past year, and I request their continued assistance and support.

GEORGE S. ATKINSON, M.D., *Councilor*

Deputy Councilors:
E. A. LARSEN, M.D., Appanoose
H. J. GILFILLAN, M.D., Davis
R. G. GILLETT, M.D., Keokuk
A. L. YOCOM, M.D., Lucas
R. L. ALBERTI, M.D., Mahaska
D. H. HAKE, M.D., Marion
D. N. ORELUP, M.D., Monroe
L. J. GUGLE, M.D., Wapello
D. R. INGRAHAM, M.D., Wayne

TENTH DISTRICT

A major change has taken place in the Tenth District, in that one of the counties that normally falls

under the influence of another councilor district has asked for transfer to that district and has been granted it. This transfer was approved by the councilors of both the Fifth and the Tenth Districts, and by the ISMS House of Delegates. The Warren County Medical Society ceased to exist as of January 18, 1961, when the Polk County Medical Society adopted its Articles of Reincorporation and By-Laws, satisfying the prerequisites set forth by the ISMS House of Delegates at its meeting in April, 1960. Henceforth, the Polk County Society will include the doctors of medicine in both Polk and Warren Counties.

Elsewhere throughout the Tenth District, there have been rumblings of discontent about the Vendor Payment Program. Almost unanimously, the men have hollered, "When is the reevaluation of the situation to take place?"

The whole area has been vigorously active politically, both before and since the election, and to my knowledge at this writing (6 January, 1961), there are only two legislators who have not been directly contacted, and I have promises from the men involved that these, in fact, will be contacted prior to the opening of the Legislature on 9 January, 1961.

We are happy to report a definite resurgence of conservatism in this area, and from the legislators we have talked to, we feel strongly that this is a healthy attitude on the part of most of these men. Their attitude toward the Kerr-Mills type of thinking has been one of friendliness, but also one of asking from whence cometh the dollars.

The Union County Medical Society has instituted a Future Doctors Program which was mildly successful at first, and then almost overwhelmingly so at the most recent meeting. We find that when we treat our young people like adults, they respond like adults, and with overwhelming warmth. We think that there would be little trouble in obtaining candidates for medical schools if all segments of American medicine would put on an "all-court press" to persuade qualified young people to enter scientific or professional pursuits. But medicine must make an all-out effort, for the competition for these capable youngsters is indeed very great.

Another new type of activity was started on a trial basis in this area—namely a specific, "one shot" attack on hearing problems. An afternoon and evening session was scheduled, and invitations were sent to all the doctors of the region. This program was dovetailed with the Future Doctors Program, for the youngsters met in one place and were given basic information on the subject, while the doctors met in another place and received specific information from a panel of experts. Then there was a fellowship dinner at which the doctors and the young people heard a discussion of the doctors' problems. All of those who attended are agreed that it was a very fruitful session, and we can recommend it for trials in other areas like ours.

The Tenth District welcomed one new physician during the year, and lost none. This has been a good year.

HAROLD J. PEGGS, M.D., *Councilor*

Deputy Councilors:
A. J. GANTZ, M.D., Adair
J. C. NOLAN, M.D., Adams
G. B. BRISTOW, M.D., Clarke
E. E. GAMET, M.D., Decatur
J. E. EVANS, M.D., Madison
Ringgold
R. W. BOULDEN, M.D., Taylor
H. J. PEGGS, M.D., Union
C. A. TRUEBLOOD, M.D., Warren

ELEVENTH DISTRICT

Medical societies in the Eleventh District have had regular meetings in most instances. However some of them have held meetings in conjunction with hospital staff sessions.

The Pottawattamie County Medical Society again presented its Iowa-Nebraska Clinical Assembly. This time a geriatrics symposium was well attended by the physicians of this area.

Considerable attention has been given to the Kerr-Mills Act in several of the counties. Four of them have had formal meetings with civic leaders and legislators in order to explain the Act and the stand taken by the AMA and the ISMS in regard to it.

Shelby County Medical Society sponsored a "Health and Science Fair" at the local county fair, in cooperation with the various paramedical and health groups and the Woman's Auxiliary. The primary goals were the stimulating of interest in medical careers, and the educating of the public on various medical subjects. About 3,500 visitors attended.

All counties have expressed disapproval of part or all of the present Vendor Payment Program. They agree, for the most part, on the present approach that the Iowa State Medical Society is taking toward this problem.

LAWRENCE V. LARSEN, M.D., *Councilor*

Deputy Councilors:
HAROLD K. MERSELIS, M.D., Audubon
EINER M. JUEL, M.D., Cass
K. D. RODABAUGH, M.D., Fremont
A. C. BERGSTROM, M.D., Harrison
M. L. SCHEFFEL, M.D., Mills
H. C. BASTRON, M.D., Montgomery
KENNETH J. GEE, M.D., Page
GEORGE H. PESTER, M.D., Pottawattamie
J. H. SPEARING, M.D., Shelby

Reports of Standing Committees

COMMITTEE ON LEGISLATION

At this writing, the 59th Iowa General Assembly is just underway, as is the 87th Congress of the United States. For that reason, this report will be a current but incomplete one on the status of health legislation, both state and national. A supplemental report will be submitted to the House of Delegates in April in order that all members may be brought up to date on the activities of the Committee on Legislation.

NATIONAL LEGISLATION

It should not be necessary to review in detail the actions of the 86th Congress relative to health care of the aged. All physicians have, of necessity, followed very closely all aspects of this controversy, and through their participation have contributed tremendously to the defeat of Forand-type legislation and to the passage of the Kerr-Mills Act. Briefly, the Kerr-Mills Act is a federal-state cost-sharing health-care plan which is in line with the AMA's legislative policy. The final hurdle for that proposal was cleared on August 29, when the Senate voted 74 to 11 in favor of it. Since

the signing of the bill into law by the President, your Legislative Committee has worked diligently to make sure that a proper program, under the terms of the Act, is implemented in Iowa. A complete review of the activity of the Committee in this area will be presented later in this report.

The new Administration has given top priority to the passage of legislation by the 87th Congress to include medical or at least some of the other constituents of health care for the aged in the Social Security System. This is the same Forand-type legislation that was rejected at the last session of Congress. President Kennedy asked Congress on February 9 for a vast and expensive health program highlighted by a compulsory Social Security scheme for financing hospital care, outpatient diagnostic services and nursing home care for the aged. This plan was introduced in the House of Representatives by Congressman Cecil King (D., Calif.), and in the Senate by Senator Clinton Anderson (D., N. Mex.). The bills are known, respectively, as H.R.4222 and S.909.

Under the Kennedy program for the aged, Social Security taxes in 1962 would be increased from the present 6 per cent (3 per cent each on employee and employer) on a tax base of $4,800, to 6½ per cent (3½ per cent each on employee and employer) on a tax base of $5,000. This would mean a total annual Social Security tax increase of $37.00 ($18.50 each for employee and employer).

The major points of the Kennedy proposal are as follows: (1) Coverage for those 65 years of age and over who are entitled to Social Security benefits or Railroad Retirement benefits. (2) Inpatient hospital services up to 90 days in a single spell of illness, for all costs in excess of $10 per day for the first 9 days, and full cost for the remaining 81 days. (3) Skilled nursing care during any length of time up to 180 days after hospitalization. (4) Hospital outpatient diagnostic service for all costs in excess of $20. (5) Up to 240 daily visits of home health services.

With strong Administration support, Forand-type legislation (the King and Anderson Bills) will have top priority in the present session of Congress.

Proposals of this type were blocked last year, primarily by the vigorous campaign waged by the medical profession, business leaders, farm groups, private insurance companies and the many others who believe that the voluntary way of providing health care is the American way.

Medicine is faced with an extremely difficult legislative battle. The Committee on Legislation urges each and every physician to be resolutely optimistic, for with an all-out effort on everyone's part, the fight can and will be won. Such an effort requires not only the official support of the State Society, but individual support as well.

The Kerr-Mills Act, as passed by the last Congress, has not been given a chance to work and should be given this chance before something new is enacted. Other states are like Iowa in that they are only now considering the implementation of the new law at the state level. Let's all write our Congressmen requesting that they vote against the King Bill (in the House) or the Anderson Bill (in the Senate).

To date, over 5,270 bills have been introduced in the 87th Congress, and 200 of them are medical bills. The ISMS Legislative Committee is kept informed on all important proposals through correspondence and contacts with the AMA Field Service Division and the AMA Council on Legislative Activities. Members of the State Society will be apprised of any issue that is of interest to the medical profession.

White House Conference on Aging. Your chairman attended the White House Conference on Aging that was held in Washington, D. C., January 9-12, 1961. A recommendation for a Social Security health plan similar to that which President Kennedy has since advocated, was approved by that Conference. The vote, by the Income Maintenance Section which dealt with that issue, was 170-99. The minority of 99 issued a report which declared that incorporating medical insurance under Title II of the Social Security Act "would interfere with the physician-patient relationship; it is unnecessary because of the potential growth of voluntary insurance; and all the needy aged can be cared for by public assistance through the recently enacted federal program of health care for the low-income aged." The minority report also pointed out that the majority report was not in accord with the official expressions transmitted to the Conference by a preponderance of the state conferences on aging.

The Medical Care Section of the White House Conference on Aging, chaired by Dr. Leonard W. Larson, president-elect of the AMA, attempted to introduce an amendment opposing the compulsory Social Security medical plan. The proposed amendment was ruled out of order, however, on the basis of the rules that had been established for the Conference.

Annual Washington Conference. Representatives from the Iowa State Medical Society held their annual meeting with members of the Iowa delegation in Congress, in Washington, D. C., on February 27, 1961. The Iowa Congressmen are concerned not only with the socializing of medicine, but with the trend toward socialism in all of the other facets of life. They are of the opinion that physicians, as well as the other people concerned, should do all within their power as citizens to see that this trend is reversed.

STATE LEGISLATION

Medical Aid to the Aged. As mentioned earlier in this report, the ISMS Committee on Legislation has worked diligently to establish in Iowa a medical aid to the aged program that would embody the broad principles set forth by the ISMS Executive Council. These principles were established after numerous materials relating to the program had been provided to the membership, and after district caucuses of ISMS delegates had been held to consider the problem.

In working toward legislative action on MAA, three basic objectives have been striven for:

1. Permissive language authorizing the Board of Social Welfare to use a fiscal and administrative agent
2. An advisory council to confer with the Board of Social Welfare as a matter of right, rather than as a matter of grace
3. Professional determination of medical need.

Excellent cooperation was given us by all of the other interested health groups in arriving at a bill that included what was desired by all. An untold number of formal and informal meetings were held to ascertain the viewpoints of all interested parties, including the State Department of Social Welfare.

Since the opening of the 59th Iowa General Assembly, several Legislative Bulletins have been sent to the membership, outlining the Committee's activity in this area. As reported in the Bulletin of February

27, 1961, the Public Health and Pharmacy Committee of the House of Representatives filed a Medical Aid to the Aged Bill (H.F.470) as a committee bill. That bill, we are pleased to report, does include the three provisions that have been listed above as essential to a sound program.

We are hopeful that a bill similar to H.F.470 will soon be introduced in the Senate by the Public Health Committee of that body. Final action on medical aid to the aged will no doubt come late in the session. The ISMS Legislative Committee will continue following this legislation very closely, and will report to the membership all items of interest concerning it. We hope that each ISMS member will visit with his legislators to urge them to support the Medical Aid to the Aged Bill in its present satisfactory form.

Dogs for Research. As instructed by the 1960 House of Delegates, the ISMS Legislative Committee is strongly supporting S.F.210 and H.F.481, which make all unlicensed and unwanted dogs available for scientific research. An amendment supported by the ISMS would make it clear that only such unwanted and unlicensed dogs would be made available without the owners' written consent.

Radiation Control. The proposed legislation on this subject would establish a state regulatory system to transfer to the state a part of the function of the existing federal atomic energy program. It is hoped that the House Public Health and Pharmacy Committee will soon report out such a bill, establishing such an Iowa regulatory agency under the State Department of Health.

Other State Legislation. As has been done in the past, a large number of bills are being reviewed and studied by the Committee on Legislation. Any bill pertaining to health is perused to determine what interest, if any, the ISMS should express in it. It is impossible to report here on all of the bills that have been reviewed, but here are brief mentions of some of them that the Committee has considered: Implied Consent (H.F.108; S.F.44); Commission on Alcoholism (H.F.288); Maternal Mortality (S.F.192); Professional Corporations (H.F.217); County Health Department (S.F.343); and Chiropodist (H.F.315).

A more comprehensive and up-to-date report on important legislative matters will be presented to the House of Delegates as a supplemental report.

N. W. IRVING, M.D., *Chairman*

SUBCOMMITTEE ON THE MEDICAL EXAMINER LAW

The County Medical Examiner Law, supported by the Iowa State Medical Society and passed by the 58th General Assembly of Iowa, went into effect on January 2, 1961. Medical doctors have been appointed as medical examiners in all but nine of the 99 counties. To date, no serious problems have arisen, but your Committee will continue to work with the Attorney General's office in handling any questions that come up.

An informational booklet was prepared jointly by the State Department of Health, the Attorney General's office, the Iowa State Medical Society and the Iowa Society of Osteopathic Physicians and Surgeons, and a copy has been mailed to each of the newly-appointed county medical examiners. A meeting of county medical examiners is to be held in Des Moines on February 16, 1961, and at it there will be a panel discussion and a question and answer period. It is hoped that this gathering will enable the program to get under way with a maximum of efficiency.

The "In the Public Interest" feature of the July, 1960, JOURNAL OF THE IOWA STATE MEDICAL SOCIETY was devoted to the medical examiner law, and has received considerable publicity in newspapers throughout the state.

A copy of the law was mailed to all members of the State Medical Society on January 11, 1961.

T. E. CORCORAN, M.D., *Chairman*

NECROLOGY COMMITTEE

The following members of the Iowa State Medical Society died during 1960:

	Age
Howard W. Barbour, Mason City	83
Edward R. Bartels, Dubuque	34
Paul W. Berney, Cedar Rapids	59
Charles T. Bigelow, St. Petersburg, Florida	83
Cleanthus E. Birney, Estherville	87
Helge Borre, Hubbard	62
Harry L. Bridgeman, Knoxville	78
Alfred L. Bullock, Cushing	57
Mattie M. Crain, Deep River	87
Marshall E. Dingman, Urbana	81
Arthur F. Fritchen, Decorah	66
Daniel J. Glomset, Des Moines	79
Thomas E. Gutch, Albia	86
Forest F. Hall, Webster City	74
Conda C. C. Heady, Bloomfield	99
William P. Hofmann, Davenport	67
Leonard J. Hospodarsky, Des Moines	56
Robert O. Hughes, Ottumwa	59
James A. Jacoby, Burlington	68
James M. Knox, Cedar Rapids	81
Edwin S. Korfmacher, Grinnell	56
Ralph F. Luse, Clinton	75
Clarence E. Lynn, Dubuque	75
Lee Roy Martin, Council Bluffs	49
Emory L. Mauritz, Des Moines	54
Clinton E. Mershon, Iowa City	90
James B. Miner, Charles City	55
Ralph H. Moe, Griswold	46
John W. Morrison, Alta	82
Robert J. Neufeld, Davenport	45
David T. Nicoll, Mitchellville	94
Reuben Nomland, Iowa City	61
Joseph E. Ridenour, Waterloo	87
Robert E. Robinson, Waverly	91
Frank E. Sampson, Creston	94
Augustus Sinning, Wilton Junction	96
Martin T. Spellman, Cedar Rapids	68
Wendell B. Sperow, Nevada	63
John H. Stalford, Los Angeles, California	91
Raymond W. Stober, Charles City	71
Jacob J. Sybenga, Pella	74
Herbert M. Tharp, Monroe	76
Elbert J. Watson, Diagonal	84
Levi J. Wilkinson, Marshalltown	82
John R. Wood, Wadena	73
Richard C. Wunschel, Davenport	40

MEDICO-LEGAL COMMITTEE

The Medico-Legal Committee has not held a meeting, but plans one prior to the ISMS Annual Meeting in April. Following that meeting, if necessary, a sup-

plementary report will be made to the House of Delegates on any matters which should come to its attention.

The Committee is waiting to hear further from the Iowa State Bar Association on the matter of anti-nuisance suit legislation, which that body was asked to study.

VAN C. ROBINSON, M.D., *Chairman*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

The Committee on Articles of Incorporation and By-Laws is in the process of studying amendments to the Articles of Incorporation and By-Laws necessary to change the name of the Society from "Iowa State Medical Society" to "Iowa Medical Society." Its recommendations on this subject will be presented to the House of Delegates. This is in conformance with a directive from the House of Delegates in 1960.

P. F. CHESNUT, M.D., *Chairman*

COMMITTEE ON MEDICAL SERVICE

This "parent group" for the medical service subcommittees had no occasion to meet during the past year.

The most active of the subcommittees has been the one concerned with Medical Service to the Indigent. Dr. Sternhill's excellent report on behalf of his subcommittee appears in this HANDBOOK, and therefore requires no comment beyond recognition of the subcommittee's earnest endeavors.

The Subcommittee on Prepayment Medical Care was represented at the National Congress on Prepaid Health Insurance last spring, where the discussions chiefly concerned the health-care problems of the aged. The Subcommittee has continued to maintain liaison with Blue Shield, as well as with commercial insurance companies, through the medium of the Health Insurance Council.

The ISMS continues to serve as fiscal agent for the Department of Defense as regards Medicare, and has paid out $209,959.45 in that program during the past year. Between now and the time of the Annual Meeting, the ISMS will have to determine whether or not it desires to renew the existing Medicare contract with the Department of Defense for an additional year.

We understand that the Board of Trustees has appropriated money for publishing a revised edition of the HANDBOOK OF RESOURCES AVAILABLE TO PHYSICIANS, and for budgetary purposes to assign half of the cost to each of the next two fiscal years. This matter was considered by the Committee on Medical Service a year ago, and nothing was done pending a canvass that Dr. Fred Sternagel was to make of the members of the Iowa Association of Medical Assistants, to determine whether or not they were familiar with the 1954 edition of the HANDBOOK and had found it useful. Dr. Sternagel made this study on an informal basis, and came to the conclusion that the HANDBOOK should be reedited and published when feasible.

The ISMS and Blue Shield are planning to arrange a limited number of meetings this spring for doctors' office assistants, to acquaint them with matters of Blue Shield administration, with the State Medical Society, with legislative and public relations questions, and with other subjects that may be of special interest to medical assistants in the areas where the meetings are held. In connection with the planning of these meetings, the role of the county medical society is to be emphasized.

The ISMS continues to make available to its members the ISMS Standard Claim Form. These blanks have been sold to members at cost. It is reported that 84 life insurance companies are now using a form designed by the Health Insurance Council for obtaining physicians' statements. The HIC considers this another example of its close liaison with the medical profession.

GEORGE G. YOUNG, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL SERVICE TO THE INDIGENT

This Subcommittee has concerned itself chiefly with the implementation and guidance of the Vendor Payment Program. As a preface, it should be stated that policy was established by the State Board of Social Welfare, and direction for its implementation was the function of the ISMS Executive Council. The calendar year 1960 was the second year of operation for the Vendor Payment Program. At the outset it needs to be stated that after two years of operation, this program presents as many problems as have been solved. Your Committee started the fiscal year with definite directions from the House of Delegates. At the Annual Meeting in April, 1960, the House approved certain proposals of its Reference Committee on Legislation and Public Relations. The Reference Committee had held open hearings for three hours on 15 resolutions pertaining to the Vendor Program, and based on the content of those resolutions and other reports on the subject of the Vendor Program, presented the following proposals:

"1. This committee [i.e., the ISMS Subcommittee on Medical Services to the Indigent] be enlarged by the addition of three members whose opinions are divergent to the present plan of operation.

"2. Stimulate efforts and enlarge the influence of the County Remedial Care Committee (Auditing Committee) with the view of increasing local control.

"3. Insist on greater communication and consultation between the State Board of Social Welfare and the Medical Society with the specific view that no changes by the former are to be made without prior consultation with this committee [i.e., the ISMS Subcommittee on Medical Services to the Indigent] or the Medical Society.

"4. Insist that the State Board of Social Welfare's policies be thoroughly understood, agreed to and followed by its constituents on the county level and by the field workers.

"5. Continue exploration of additional methods involving local county option."

With these directives as a guide, the enlarged Committee first met at the ISMS offices on May 26, 1960. That was a most meaningful session, at which all present appeared willing to cooperate with one another. Accordingly, a motion was made and unanimously approved that it be the sense of the Subcommittee that the Vendor Program is a necessity as of now, and that all efforts are to be directed toward making it operational. At that and subsequent meetings, the mandate of the House of Delegates was the guiding principle, and it was also carefully observed in the subsequent meetings between the Subcommittee and the State Board of Social Welfare.

The second item which the House of Delegates

directed to the attention of the Subcommittee related to increasing the effectiveness of remedial care or auditing committees at the county level. One curious fact seemed to stand out with respect to that matter. In those counties where there was favorable rapport between a functioning county medical committee and the local board of social welfare, there was a minimum of conflict in the operation of the program. Where this did not prevail, there were a variety of complaints ranging from objections to arbitrary decisions by welfare representatives, and alterations (usually lowerings) of bills submitted by doctors, to allegations of interference in strictly medical matters by members of welfare boards and an over-utilization of the program. This Subcommittee has strongly recommended that responsible members of county medical societies should implement the auditing committees and urge them to meet and to function. More specifically, it has recommended that the Executive Council convey to each county president that a reappraisal of its auditing committee be made, and that the committee be directed to meet regularly, keep minutes and exercise a firm control, not only in its relations with physicians but also in its negotiations with the welfare board. Also, all matters that could not be resolved, the county society should be asked to refer to an appropriate committee of the State Medical Society.

This, of necessity, involved the third point in the directives of the House of Delegates, namely the establishment of more effective communication between physicians and the State Board of Social Welfare and its constituent county boards. Accordingly, this Subcommittee recommended that all directives of the State Board of Social Welfare to its subordinate offices in the counties which pertain to medical matters be submitted first to the State Medical Society for approval, and that any directives of the State Department of Social Welfare addressed to doctors throughout the state be distributed and channeled through the office of the State Medical Society. Also, any problems or disagreements between local auditing committees and county welfare boards should be referred to the area councilor for arbitration. When these recommendations become operational, it is believed that this point in the House of Delegates' mandates will have been complied with.

Closely identified with this item is the matter of lack of rapport or perhaps of understanding between local welfare workers and their state department. This Subcommittee has been assured that any arbitrary action by a local welfare worker in his or her dealings with county auditing committees will be summarily corrected, and the individual will be disciplined. A case in point is the perennial problem of the limit of four calls per patient per month. That figure was recommended by this Subcommittee as a guide and a preventive against over-utilization by both patient and physician. It was not intended to preclude the necessary attention required by a patient or regarded as necessary by his physician. It was recommended that calls in excess of four per month be attested to by a simple statement by the physician on the billing form, and that the charges would then be allowed. It was the contention of the welfare board that misunderstanding has been the greatest cause of conflicts on points such as this between doctors and welfare representatives. It is the hope of this Subcommittee that these expressed intentions will be translated into action.

As regards the final point in the House of Delegates' directives—that of continuing to explore methods for improving local (county) control—the Subcommittee discussed two propositions. The first proposal was to alter the Vendor Payment aspect of the program by making payments direct to the patient. The proponents of this idea argued, and quite logically, that this would restore a measure of self-respect to the patient, that it might preclude over-utilization, and that it might restore the traditional patient-physician relationship to a considerable degree. Finally, it would at least partially eliminate the third-party element in the program. Idealistic as this appears, and admitting its many merits, we think that it is unrealistic and would necessitate a state-wide poll of all participating physicians before the revised plan could be said to have physician acceptance. It is the opinion of the chairman of your Committee that this proposal would not be accepted by even a sizable number of our colleagues.

Second, it was proposed that an agency other than the State Board of Social Welfare be appointed or designated as the administrative or fiscal agent for the funds currently paid to vendors under this program. The rationale of such a change is that it would eliminate the highly objectionable third-party in this operation. This proposal was presented to the legal counsel and to the Executive Council of our State Society. The events that followed are now a matter of record. The president of ISMS, by direction of the Executive Council, appeared before the Board of Social Welfare, along with a committee of his selection, and presented the proposition objectively and effectively. The Board of Social Welfare replied with a polite but firm refusal. Any further efforts in this direction will be in the province of the Executive Council of the Society.

Finally, the Subcommittee, augmented by members of the staff, the president of the Society and the ISMS legal counsel had a meeting with the State Board of Social Welfare to explore the newest proposal for extending the scope of the Vendor Payment Program, namely the implementation of Public Law 86-778, variously referred to as the Kerr-Mills Bill, the Mills-Baker Bill or H.R.12580. Currently, this medical aid to the near-needy is being explored by many interested groups. To date, our State Medical Society has taken the position of approving state enabling acts as a deterrent to the more radical measures that would prevail if government were to invade the field of medicine more deeply.

If any conclusions are to be drawn from the efforts of this Subcommittee, one of them must be that its accomplishments are less than were hoped for or desired. The Subcommittee has made its position unmistakably clear to the State Board of Social Welfare in matters relating to the care of patients and to its desire for control of matters related to patient care by doctors at the county level. It seemed obvious, at our meetings with the Board of Social Welfare, that that body, as presently constituted, was unwilling to surrender any of its prerogatives.

On the positive side, it is gratifying to report that the Subcommittee's recommendation for an increased allowance to dispensing physicians has been accepted and implemented.

Of the 99 counties in Iowa, 94 have appointed county medical and remedial care committees, and they are functioning reasonably well. Finally, there are 1,500

physicians in the state who are participating in the Vendor Payment Program.

The Subcommittee acknowledges with deep gratitude the valuable assistance of the ISMS president, Dr. Van Epps, of our legal counsel and of the members of the ISMS staff and the secretaries.

ISAAC STERNHILL, M.D., *Chairman*

SUBCOMMITTEE ON PREPAYMENT MEDICAL CARE

During the past year, the Subcommittee on Prepayment Medical Care has been active in the following areas:

1. A representative of the Subcommittee attended the National Congress on Prepaid Health Insurance, in Chicago on May 13-14, 1960. It was the first such meeting ever held between national representatives of organized labor and organized medicine to discuss the problems of health care. A report of the meeting was presented to the Executive Council of the ISMS.
2. The Subcommittee has continued to strive for a closer liaison with the Health Insurance Council. Plans are being formulated for a joint meeting.
3. The Subcommittee is engaged in a continuous study and review of articles and reports on the field of health insurance, its problems and achievements.
4. The Subcommittee has investigated the matter of language in commercial insurance contracts that define hospital service and medical service, especially as regards pathology and radiology. Negotiations are under way with representatives of the Health Insurance Council, and this complex problem will be dealt with as thoroughly as possible.

GEORGE G. YOUNG, M.D., *Chairman*

SUBCOMMITTEE ON VETERANS' AFFAIRS

The Subcommittee on Veterans' Affairs has not held a meeting during the past year. Several publications of particular interest have been distributed to Subcommittee members for their information and study. However, no problems have been presented that would necessitate a meeting of the Subcommittee. Hence, a report is not required.

R. C. GUTCH, M.D., *Chairman*

SUBCOMMITTEE ON HOSPITAL AND PROFESSIONAL RELATIONS

No matters were referred to this Subcommittee for attention during the year, and no meetings were held. As a result, no report is presented.

W. L. DOWNING, M.D., *Chairman*

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

The Committee on Medical Education and Hospitals cooperated with two county medical societies in sponsoring postgraduate medical education programs during the past year.

On May 11, 1960, a medical program was sponsored at Burlington, in cooperation with the Des Moines County Medical Society, and on December 1, 1960, a program was presented in Fort Dodge in cooperation with the Webster County Medical Society. Reports from county medical society officers have indicated that both of these meetings were very successful. Physicians from a total of 31 counties in Iowa attended, and those of them who are members of the American Academy of General Practice received Category II credit for doing so. The programs began in the afternoon, and in both instances concluded with dinners and evening presentations.

The Committee plans to continue scheduling these regional postgraduate meetings. Any county society that is interested in cooperating with the ISMS in conducting a medical conference is urged to get in touch with the chairman.

In response to a directive from the House of Delegates, the Committee considered various methods of attracting interested and capable students to enter the medical profession. Dr. Harold Peggs, a member of the Committee, was assigned major responsibility for obtaining and disseminating information on medical careers. Letters have been sent to county medical society officers encouraging the establishment of Future Doctors Clubs and providing suggestions for setting up such clubs. An effort is also being made to publish feature stories on Future Doctors Clubs and medical careers in various newspapers throughout the state.

The ISMS, as a member of the Iowa Interprofessional Association, is also cooperating with that organization in the development and distribution of a health careers kit which will include informational pamphlets on careers in medicine, dentistry, nursing, pharmacy, veterinary medicine and hospital administration. These kits will be provided to vocational guidance counselors in all Iowa schools.

LEE FORREST HILL, M.D., *Chairman*

GRIEVANCE COMMITTEE

The Grievance Committee of the Iowa State Medical Society met at irregular intervals during the past year. There has been a steady decline in the number of cases referred to it for arbitration during the past two years. This would seem to indicate that understanding and mutual confidence are increasing, between Iowa physicians and their patients. The stronger the bond grows between the doctor and his patient, the better we shall be armed to face the "New Frontiers" that loom before us.

Grievances directed to this Committee during the past year have been of a less serious nature and have mostly been concerned with the fees charged by Iowa physicians for their services. In most cases the fees have not been exorbitant, but the doctor has failed to explain to his patient why such a fee was charged. We of this Committee recommend that Iowa physicians spend a little more time in the discussion of charges in connection with their services. If they do, perhaps even this cause of grievance can be removed from our agenda.

The members of this Committee have repeatedly expressed a desire to impart some of the knowledge and experience they have gained to the undergraduates at the S.U.I. College of Medicine. Perhaps there is a need for such a service. If so, a qualified member of the Committee can be provided for either formal or informal discussions with medical students. Such a proposal may be presented to the Executive Council. Do you approve of it?

In conclusion, we wish to thank all members of this Society for their prompt cooperation and for their assistance to us in the performance of our duties.

D. O. MALAND, M.D., *Secretary*

COMMITTEE ON PUBLIC HEALTH

Up to the date of this report, there have been no problems referred to the Committee on Public Health.

A "recap" of the interests of the Committee is as follows. We hope that the State Medical Society can embark upon a comprehensive public health program. To do this, top-level planning will be necessary, as well as a willingness of individual physicians to accept broader concepts of maximum health for their communities.

To preserve the dignity of our profession, we must carefully plan the type of community service that we are to give, so that we may give the impression of unified interest on the part of medical men. Our plans should reflect concern about our community responsibilities, rather than interest in our individual rights. We know that this can be accomplished, for other state medical societies are achieving it.

E. A. LARSEN, M.D., *Chairman*

SUBCOMMITTEE ON CHRONIC ILLNESS

No matters were referred to this Subcommittee during the year.

H. W. MORGAN, M.D., *Chairman*

SUBCOMMITTEE ON REHABILITATION

Your Subcommittee on Rehabilitation has had no formal meeting during the year 1960-1961, but has maintained a keen interest in the subject and has followed closely the trends in rehabilitation both on the local and the national level. On January 12, 1961, the chairman had an opportunity to attend the White House Conference on Aging. He attended the meetings of Section VI, which pertained to rehabilitation, where problems pertaining thereto were discussed. The following is a short summary of some of the points covered at that meeting.

"Rehabilitation is the only hope for those afflicted with and disabled by chronic or degenerative conditions until such time as specific means are found to prevent and cure them. The rehabilitation program must be dynamic and total, and designed to meet the physical, emotional, social and vocational needs of the chronically ill and disabled. Since existing programs are limited and can by no means satisfy the demand, the following recommendations were offered: Vocational Rehabilitation services be improved and expanded so that older disabled persons may maintain or regain their ability to work and secure suitable employment. A Federal Grant in Aid program should be established to help states develop programs designed to inculcate rehabilitation practices in governmental, nonprofit and proprietary institutions providing long-term services to handicapped older people. State Councils of Representatives of Public Health Agencies are concerned that rehabilitation services to seriously handicapped older people should be established. Local councils also should be organized to serve as centers for public information, referral and planning services. Voluntary and other health insurance plans should provide inpatient as well as outpatient coverage for rehabilitation services in hospitals and in rehabilitation centers. Research should be encouraged to identify administrative and organizational patterns through which rehabilitation services can be provided effectively. In this and other fields, voluntary effort must be encouraged at all levels, and individual community initiative emphasized. There should be a Federal Grant in Aid program to help communities establish rehabilitation facilities as well as workshops. As one means of strengthening rehabilitation efforts, consideration should be given to the establishment of a National Institute of Rehabilitation."

It is obvious from the above that these recommendations will be made to the present Congress, which will likely act in the matter of appropriations to provide money for the suggested lines of endeavor. It would be well for the ISMS to maintain its Subcommittee on Rehabilitation so as to be in readiness, in case it is called upon to furnish information, cooperation or even representation in implementing any national scheme.

It may be of interest to the ISMS membership that a committee representatives from the College of Medicine, College of Education, Post-Graduate College and others, has been appointed by the president of S.U.I. to study means of increasing the facilities for teaching and the facilities for broadening the concept of rehabilitation for the State of Iowa. The chairman of the ISMS Subcommittee on Rehabilitation has been actively engaged in the discussions carried on within this S.U.I. committee, and although the ISMS has no direct responsibility in the matter, there may well come a time of implementation when the State Medical Society will be vitally interested.

The ISMS Subcommittee will welcome any thoughts or suggestions that occur to the members of the Society as to how best the State Society can foster, strengthen and participate actively in such possible programs. The Subcommittee on Rehabilitation will make every effort to keep the members informed of the progress that is made in this area of vital interest to doctors, as events occur locally and nationally.

CARROLL B. LARSON, M.D., *Chairman*

SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

During 1960, the Subcommittee on Maternal and Child has been concerned mainly with two matters: (1) Immunization, and (2) A school health program. In connection with immunization, the Subcommittee recommended to the Executive Council that a suggested immunization guide be mailed to each member of the State Medical Society. With the approval of the Executive Council, the guides were mailed on September 13, 1960.

On August 17, 1960, the Subcommittee met with members of other health and educational groups concerning the establishment of a committee to develop standards and recommendations for school health programs. All representatives present agreed that such a program would be worthwhile, and plans were made to set up a central committee composed of members chosen by education, medicine, nursing and dentistry. One of the first tasks to be undertaken by such a committee would be the development of a uniform medical health record card for use throughout the state.

Another subject discussed by the Subcommittee was the testing of retarded children for phenylketonuria. A discussion of this subject is to be found in an issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY of a few years back (47: 537-538, August, 1957). The Subcommittee is in the process of setting up specific rec-

ommendations regarding phenylketonuria in specific groups of Iowa children.

JACK SPEVAK, M.D., *Chairman*

SUBCOMMITTEE ON EXFOLIATIVE CYTOLOGY

This Subcommittee met last April, shortly before the ISMS Annual Meeting, and has not been called into session since then. Prior to the current period, the Subcommittee recommended that the ISMS cooperate with the American Cancer Society and its Iowa Division in a program of lay and professional education in the cytologic diagnosis of cancer. This has progressed well.

Without having a formal meeting, the Subcommittee recommended that the school for cytoscreeners previously conducted by Dr. F. C. Coleman, of Des Moines, be reactivated to provide personnel for this expanding service in Iowa.

All members of the Subcommittee were questioned as to their attitudes regarding the epidemiological survey program started by the American Cancer Society and its Iowa Division without previous discussion with the ISMS. This study involves a rather lengthy questionnaire regarding family living habits. Iowa citizens have been and are being asked to complete it. As the respondents die, physicians are questioned and the Bureau of Vital Statistics in the State Department of Health has been asked to supply their death certificates so that the study of individual cases can be completed. The purpose is to determine statistically whether there is any correlation between living habits and the incidences of various types of cancer.

On the basis of the replies received from the members of the Subcommittee, it is apparent that the Subcommittee members unanimously recommend that the ISMS express its approval and its willingness to cooperate in completing the collection of necessary data. One member raised the question of the legality of releasing information of this sort without the consent of the decedent's next of kin.

Two other members and I feel it should be brought to the attention of the Iowa Division of the American Cancer Society that such matters as this should, in the future, be discussed with the ISMS before they are started, and that the ISMS will expect that procedure.

K. R. CROSS, M.D., *Chairman*

SUBCOMMITTEE ON NATIONAL HEALTH ASSOCIATIONS

No meetings of the Subcommittee on National Health Associations have been held this year.

E. B. FLOERSCH, M.D., *Chairman*

COMMITTEE ON PUBLIC RELATIONS

During the past year, the Public Relations Committee has continued developing and promoting public service projects, and strengthening relations with the public and the press.

Following is a summary of projects and activities which have been conducted by or on the recommendation of the Public Relations Committee:

1. The ISMS field secretaries are making a limited number of personal contacts with industrial leaders throughout the state, to determine management's attitude toward the medical profession, prepayment health insurance, medical care costs, etc., and to discuss what organized medicine is doing in those areas. To date, these contacts have proved informative and valuable, and also have been beneficial in a public-relations sense. In conjunction with this activity, the Committee plans to schedule a state conference with officials of various labor groups, to determine specific attitudes toward the medical profession, health insurance, medical care costs, etc.

2. A series of newspaper advertisements on medical socio-economic subjects, entitled "In the Public Interest," was initiated in Wayne County, Iowa, newspapers as a pilot project, under the sponsorship of the Wayne County Medical Society. The series was well received and is being continued. The Public Relations Committee is urging all county medical societies to initiate similar ads in local newspapers, and will cooperate in the development of specific articles.

3. In order to provide general public relations information to the membership, a series entitled "P/R Tips" will be included as a regular feature in future issues of the ISMS NEWS BULLETIN.

4. The third Hawkeye Science Fair, under the sponsorship of the ISMS, the DES MOINES REGISTER AND TRIBUNE and Drake University, is scheduled for April 7-8 at the Veterans Memorial Auditorium, in Des Moines. The Fair continues to grow each year, and around 300 Iowa students are expected to exhibit at it this year. The Public Relations Committee was instrumental in provoking interest in this worthwhile public service project.

5. Packets of materials developed by the AMA on the 1960-1961 national debate topic "Should the U. S. Adopt a Program of Compulsory Medical Care" were distributed from the ISMS office to Iowa college students, as well as to representatives of various lay organizations.

6. Supplies of the Personal Health Information Card, for use by patients, were distributed to ISMS members on request. A limited number are still available.

7. A copy of an AMA booklet entitled COST OF MEDICAL CARE was mailed to each ISMS member for reception-room use.

8. Plans are being made to utilize a talk entitled "The British Medical System," presented by a British physician who now practices in Iowa.

9. The annual Senior Day program, arranged by the Public Relations Committee, was presented in Iowa City last May for senior medical students and their wives. The 1961 program is scheduled for May 13.

10. The Committee cooperated with the National Advertising Council in a campaign to promote polio inoculations.

11. The "In the Public Interest" (green) page which appears monthly in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY is being mailed regularly to Iowa news outlets and to the legislators. The articles report the ISMS position on legislative proposals and review various public service projects of the Society.

12. Constant liaison is maintained with news outlets in Iowa. Appropriate news releases are prepared and distributed throughout the year, and wide coverage is secured for accounts of the Annual Meeting in the newspapers, and on radio and television.

The Public Relations Committee has also developed information on projects that can be carried out at the local level, e.g., health forums, newspaper ads, speakers' bureaus, television programs, distribution of perti-

nent literature to patients, etc. Information on these projects is provided by the ISMS field secretaries to county medical society officers, and the Public Relations Committee has been and will continue to be cooperating with the county societies in their implementation.

The Committee discussed the advisability of changing the name of the Iowa State Medical Society. It was felt that the ISMS is often thought to be an agency of the state government, and for that reason, among others, the Committee recommended to the Committee on Articles of Incorporation and By-Laws that the name be changed, preferably to "The Iowa Medical Society."

Miss Carol Towner, director of special services for the AMA, attended the October meeting of the Public Relations Committee and presented a report on current priority projects of the AMA.

At the February meeting of the Committee, there was considerable discussion concerning the bad press and television reports that the medical profession had received regarding its position on financing health care for the aged. The Committee passed the following motion, which subsequently was approved by the Executive Council: "That the president of the ISMS and an AMA delegate request an audience with the Board of Trustees of the AMA to reaffirm the resolution passed by the Board of Trustees on February 3, 1960 (that the AMA Board of Trustees consider the implementation as soon as practical and using whatever means necessary, of a program which would present to the American public an image of American medicine and the medical profession that will maintain the support and confidence of the public for the private system of medical care), and to inquire what actions, if any, have been taken in reference to the resolution, and if not, why. Further, point out that private professional counsel in the field of public relations could be helpful to the AMA Public Relations Department in developing and implementing an all-out, nationwide educational campaign to gain the support and confidence of the public for the private system of medical care."

C. N. HYATT, M.D., *Chairman*

COMMITTEE ON INTERPROFESSIONAL ACTIVITIES

The Committee on Interprofessional Activities has done most of its work during the past year in cooperation with the Iowa Interprofessional Association, of which the Iowa State Medical Society, the Iowa Dental Association, the Iowa Nurses Association, the Iowa Pharmaceutical Association and the Iowa Hospital Association are members. Dr. Floyd Burgeson served as president of the IIA from September, 1959, until September, 1960, and Mr. Donald L. Taylor, the executive director of ISMS, continues to serve as the secretary-treasurer of IIA, an office that he has held for several years.

The IIA has undertaken three projects during the past year. First, contacts are being made with representatives of the various member organizations at the local level to encourage the formation of county interprofessional associations. In this connection, an educational program has been initiated to inform local groups of the purposes and objectives of the IIA. A speakers' bureau has also been established so that information on the organization can be presented at various local, district and state meetings of the member groups. The members of the Interprofessional Activities Committee serve on the IIA speakers' bureau.

Second, the IIA has developed a health careers kit, which will include informational pamphlets on careers in medicine, dentistry, nursing, pharmacy, veterinary medicine and hospital administration. The kits will be distributed to vocational guidance counselors in all Iowa schools.

The third major IIA project was the sponsorship of a dinner on January 31 for all Iowa legislators and the governor and lieutenant governor of the State of Iowa. It was attended by 150 of the 158 legislators. This was a get-acquainted meeting, and no formal program was planned. However, the president of the IIA commented briefly on legislative matters that are of mutual interest to the member organizations.

FLOYD M. BURGESON, M.D., *Chairman*

COMMITTEE ON HEALTH EDUCATION

The Committee on Health Education has been active in various projects designed to educate the public on matters of health.

"Medical Diary" films on various health topics, produced by the ISMS, are available to Iowa television stations on a re-run basis. Station KVTV, Sioux City, re-ran a series from August 14, 1960, to January 15, 1961, and plans to schedule another series in the future. Thirteen of the films were sold to the AMA three years ago for use by other states, and are now being sponsored by the Florida Medical Association over several stations in that state.

The Committee hopes that county medical societies will cooperate with local television stations in the production of medical programs, and the ISMS field secretaries have been requested to explore this matter with county medical society officers. The Committee will cooperate with county medical societies in the development of a program series.

Contact has been made with the director of adult education for the Des Moines Public Schools, and tentative plans are being made for a series of medical education program over KDPS-TV, the educational station in Des Moines, in the fall or winter of 1961.

Films from the ISMS film library are provided on request to both professional and lay groups, and they have been utilized frequently during the past year.

A series of radio programs titled "Medical Milestones" is currently being broadcast over several radio stations in Iowa. The Committee cooperated with the AMA in promoting the use of this series. Contacts were also made with the program directors of 20 radio stations in Iowa to encourage the use of another series of health education programs titled "Highroad to Health," which was produced by Lederle Laboratories in cooperation with the AMA.

The health column "Iowa M.D.'s Say—" continues to appear in WALLACE'S FARMER. The articles deal with various medical subjects, and they have been appearing in this farm publication for the past eight years.

The ISMS cooperated with the State Department of Health and various lay organizations in the development of the Twelfth Annual Health Education Workshop, which was held in Des Moines last June. These workshops have been conducted for health chairmen and personnel from various lay organizations and health groups. We understand that during the next few years, at least, regional meetings at various centers

throughout the state will be substituted for the single statewide gathering. In the past, physicians have participated in these workshops occasionally, as speakers or as discussion leaders. However, since it is difficult for physicians to be away from their practices to attend these meetings as "spectators," the Committee is encouraging the Woman's Auxiliary to send doctors' wives to these sessions as representatives of both the Auxiliary and the ISMS.

ISMS representatives attended a conference on "School and Community Health Councils," sponsored by the State Department of Health, at Clear Lake last July.

County medical societies have been encouraged to cooperate witth local Farm Bureau organizations in developing educational programs on tetanus immunization. Two articles on this subject have appeared in WALLACE'S FARMER; there have been articles on it in two of the 1960 issues of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY; and there has been an editorial specifically on the tetanus-immunization education campaign in the January, 1961, JOURNAL.* The Committee plans to conduct a survey of county medical societies to determine whether there is a need or a desire for the State Society to develop a statewide educational campaign on tetanus immunization.

A list of suggestions for establishing speakers' bureaus at the local level are being distributed to county medical society officers by the ISMS field secretaries.

The ISMS Speakers' Bureau secured speakers for seven county medical meetings and for 12 lay meetings during the past year.

JOHN G. THOMSEN, M.D., *Chairman*

Reports of Special Committees

COMMITTEE ON INDUSTRIAL HEALTH

On November 2, 1960, the Committee on Industrial Health held its only meeting of the year. Guests at the meeting were Clyde M. Berry, Ph.D., associate director of the Institute of Agricultural Medicine, and Messrs. Don Lowe, Iowa State Labor Commissioner, and Harry Linn, executive vice-president of the Iowa Manufacturers Association. Those gentlemen were in attendance to present ideas on the labeling laws in Iowa regarding insecticides and other chemicals. The Committee was aware of the labeling problem, it felt that new controls are needed, and it pointed out that the regulations should be flexible. The Committee felt that if any bill is formulated, it would like an opportunity to discuss the proposals so as to be in position to assist in its passage through the Legislature.

After once more reviewing the matter of setting up "principles and ethics for industrial physicians," the Committee feels that the subject is already well covered by directives from the AMA, but wishes again to emphasize that the AMA's statements should be brought to the attention of the county medical societies. The subcommittee appointed to study this problem was disbanded, but the physicians who studied this matter were asked to keep it in mind and to report any new developments.

At a previous meeting of the Committee, a subcommittee had been created to report on "aggravation" in workmen's compensation cases. At the November 2, 1960, meeting, correspondence from other states was reviewed, and there was a discussion of second-injury laws and the use of waivers.

The chairman reported on the AMA-sponsored Joint Conference of Chairmen of State Medical Society Committees on Industrial Health, which had been held in Charlotte, North Carolina, on October 10. He gave a complete report, and quoted an important comment made by Dr. Edward C. Holmblad, chairman of the Medical Committee to the President's Committee on Employment of the Physically Handicapped: "It is important that members of state medical society committees on industrial health be associated with industry."

C. HARLAN JOHNSTON, M.D., *Chairman*

COMMITTEE ON MENTAL HEALTH

During the past year, the Committee on Mental Health has held four meetings. We have continued our interest in the trends in the mental health clinics throughout the state. Our prime concern has been to emphasize medical-psychiatric principles in the operation of these clinics. With this in mind, the Committee adopted a revised set of "Standards for Mental Health Clinics," and published it in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY (50:275-276, May, 1960).

During the year, the Committee encouraged the Governor of Iowa to appoint a committee to review all commitment laws currently on the statute books. That committee was ultimately appointed, and we made contact with it, encouraging it to develop legislation whereby committed patients might retain their civil rights, and whereby the question of competency might be the subject of separate action.

We encouraged a closer liaison between the psychiatrists of the state and all practitioners of medicine. This type of activity should be on-going.

We concerned ourselves with the relationship between the Iowa Mental Health Authority and the Board of Control of State Institutions.

We corresponded with the Narcotics Division of the Treasury Department, looked into the narcotics situation in the State of Iowa, and concluded that no significant problem exists at this time.

We concerned ourselves with the increasing interest being shown throughout the nation in hypnosis. At our suggestion, the statement on hypnosis by the AMA Council on Mental Health was reprinted in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY (51:55-56, January, 1961). As a Committee, we deplored the giving of instruction in hypnosis by non-medical personnel, for non-medical persons cannot integrate the instruction into the complexities of medical practice.

As a Committee, we made contact with the Governor's Committee on Alcoholism, emphasizing that alcoholism is a medical problem. We expressed a desire to work with the Governor's Committee to see to it that the medical needs of patients are adequately met.

The chairman had the pleasure of attending the Seventh Annual Conference of Mental Health Representatives of State Medical Associations, held in Chicago.

During the year, close liaison was maintained with the director of mental health in the Board of Control of State Institutions.

I should like to take this opportunity to thank all members of the Committee for their diligent participa-

* The JOURNAL references are: 50:77-86, February, and 593, September, 1960; and 51:37, January, 1961.

tion in the affairs of the Committee for the betterment of the State Medical Sociey as a whole.

PAUL M. KERSTEN, M.D., *Chairman*

COMMITTEE ON RURAL HEALTH

For the time being, it seems, there is no prospect of the State Medical Society's getting help from the Iowa Farm Bureau Federation in enlarging the ISMS Educational Loan Fund. Negotiations between the ISMS Committee on Physician Recruitment and the Farm Bureau were begun last summer, but in the early fall a letter was received from the program services director of that organization, saying that the Farm Bureau wished to postpone consideration of the project for two or three years.

The Iowa Bankers Association is being asked to consider cooperating with physicians in the enlargement of the ISMS Educational Loan Fund. The organization has as yet taken no official action, but those of its representatives to whom physicians have talked seem well disposed toward it.

The suggestion was made at a meeting of the Rural Health Committee that the State Medical Society might explore the possibility of borrowing money from banks, at nominal rates, to enlarge the Loan Fund.

At that same Rural Health Committee meeting, on November 17, 1960, Mr. Richard Nelson, a field representative of the AMA, outlined some services in the field of rural health which the AMA is prepared to give to state medical societies. He proposed that the ISMS assign individual physicians to serve as liaison with farm journals published here, and perhaps with country newspapers, as a means of making sure that they print materials that are fair to the medical profession. He said that the AMA has numerous articles that it can make available to those publications through state medical societies, and plans constantly to develop others.

He pointed out that the ISMS can profit considerably from establishing close cooperation with the Agricultural Extension Service at Ames. The comparable organization in North Carolina has conducted demonstrations of chest x-rays, diabetes detection and other screening procedures that are widely utilized in public health work, thus presumably improving relations between doctors and farm people in that state, as well as preparing the way for improvements in rural health. In Virginia, he said, the 4-H program directed by the Agricultural Extension Service contains a unit on health, part of which promotes the idea of everyone's having a family physician. It also contains a unit on quackery and the overuse of vitamins.

He also told the Committee of the possibility that Iowa might act as host to a regional rural health conference, in the near future.

The chairman of the Committee, along with Dr. S. P. Leinbach, a member of the AMA Council on Rural Health, and several other Iowa doctors, attended the AMA's Third National Rural Health Study Conference, in Chicago, on February 3-4, 1961. At that time it was definitely decided that a regional rural health conference will be held in Des Moines next spring, and the dates were subsequently set as May 18-19, 1962. The AMA will plan the meeting, engage the speakers and pay the expenses, but doubtless its Council on Rural Health will welcome suggestions from Iowa regarding topics and speakers.

At a meeting of the ISMS Rural Health Committee on February 22, the members present made a number of such suggestions for transmittal to the AMA. One of them was that a speaker who had addressed the meeting in Chicago, Dr. W. Clarke Wescoe, formerly the medical school dean and now the president of the University of Kansas, be invited to speak at the Des Moines meeting, on the technics by which his medical school has persuaded its graduates to enter general practice and locate in rural Kansas.

The Committee members agreed that there is a need for a conference between physicians and the Agricultural Extension staff at Ames. At such a meeting, plans could be developed for starting or expanding cooperative health-education projects. It was decided, however, that this meeting should be postponed until after the ISMS Annual Meeting, when the personnel of the Committee quite possibly may be changed.

J. W. GAUGER, M.D., *Chairman*

PRECEPTORSHIP COMMITTEE

At a meeting of the ISMS Preceptorship Committee on October 11, 1960, there was a great deal of discussion concerning the proposal that preceptorships should take place, at least in part, during the winter months. Some of the arguments in favor of that arrangement were: (1) Students would see different, and probably more, pathologic conditions during winter preceptorships. (2) The preceptor's convenience, in some instances, would be better suited, and thus some doctors who have been unwilling to take students might be recruited to serve as preceptors. (3) Many doctors' wives dislike the preceptorship program because preceptees are brought into their homes at a time when their young children need the greatest number of hours of supervision per day, and when vacation trips, outings and casual meal-planning would otherwise be possible.

The representatives of the University reported that both two-week and four-week preceptorships during the regular school months in the senior year at the S.U.I. College of Medicine might hereafter be scheduled, as a consequence of a new arrangement under which students are permitted one four-week and two two-week electives—i.e., duties on specific hospital services.

The faculty and administration at the College of Medicine, however, were unenthusiastic about the proposal for a number of equally cogent reasons. First, some serious administrative difficulties would arise as a consequence of splitting the preceptorships. If a student were to serve two weeks during the summer and then if no physician were willing to take him for the remaining two weeks during the winter, he would be unable to complete the month required of him under S.U.I. regulations. Second, though many students sacrifice income by serving preceptorships during the summer, the new arrangement would not free them for summer employment, since during the summer months they would have to make up duty on one or more hospital services that they had missed as a result of taking preceptorship training during the regular school year.

The Preceptorship Committee is anxious to have preceptorships provide students with some first-hand experience with general practice, and thus it is unenthusiastic about having the University assign students to specialists engaged in group practice. The Committee members think that preceptees should be assigned to groups of specialists only when insuf-

ficient numbers of GP preceptors have been signed up.

The Committee members are not altogether agreed regarding the utility of a preceptor's taking his preceptee to live with him in his home. Although such an arrangement facilitates retrospective analyses of cases seen during the day, the preceptor can invite the student to his home for such "bull sessions" several times a week. The student's living at a rooming house would remove most of the objections which doctors' wives have expressed toward the program. The Committee, however, has decided to make no recommendation on this point.

The Preceptorship Committee has started using a new form for enrolling preceptors to serve during the summer of 1961. It is multiple-copy pad that permits the simultaneous making of four copies of each enrollment, for subsequent distribution to (1) the S.U.I. College of Medicine, (2) the ISMS central office, (3) the secretary of the enrollee's county medical society, and (4) the councilor of the enrollee's district. The device will, among its other uses, help to get the assistance of the councilors in the preceptor-enrollment campaign.

As this is written, the 1961 preceptor enrollment is progressing too slowly, for only about 50 of the necessary 113 preceptors have thus far signed up. Physicians, particularly general practitioners, who can arrange to take students for a month next summer are urged to get enrollment blanks from their county medical society secretaries, complete them, and send them to the ISMS headquarters office.

D. G. SATTLER, M.D., *Chairman*

PHYSICIAN DISTRIBUTION COMMITTEE

The Physician Distribution Committee was formed for the express purpose of setting up a loan fund for medical students under the joint sponsorship of the ISMS and the Iowa Farm Bureau Federation. This fund was to supplement the present ISMS Educational Loan Fund by making loans to freshmen and sophomores in medical school, as well as to upperclassmen.

Students receiving loans from this new fund would be required to sign an agreement pledging themselves to practice in small towns for a stipulated number of years.

The Committee members held a meeting with representatives of the Farm Bureau late last June. Both groups were quite enthusiastic and agreeable to the formation of such a fund. It remained only to work out the details and obtain final approval of the governing boards of the two organizations.

The Committee's staff secretary, early last fall, corresponded with the Illinois State Medical Society regarding a similar jointly sponsored loan fund that has been in operation there for several years, and a member of the Farm Bureau staff made a trip to Chicago to talk with his opposite number in Illinois about the project. Though he was quite enthusiastic when he returned, he wrote us, on September 29, 1960, "Regretfully, the Iowa Farm Bureau Federation is not, at this time, in a position to participate in this project. We will keep the information on this project on file in case we take a new look at it in two or three years."

Subsequently, one of the members of the Committee talked with Mr. Ben S. Summerwill, an Iowa City banker and one of the trustees of the ISMS Educational Loan Fund, about the possibility of interesting the Iowa Bankers Association in helping to finance loans to medical students. To date, the Committee has nothing that it can report regarding the bankers' attitude.

ROBERT E. GRIFFIN, M.D., *Chairman*

COMMITTEE ON BLOOD BANKING

The Blood Banking Committee held no formal meetings during the year, and only one item was referred to it. This was a request from the Iowa Association of Blood Banks for help in securing the enactment of legislation to decrease the liability for the transmission of serum hepatitis through blood transfusions. The Committee was unanimous in approving such a legislative proposal, and it requested the ISMS Committee on Legislation to support its passage.

WALLACE RINDSKOPF, M.D., *Chairman*

CHIROPRACTIC COMMITTEE

This Committee was not activated during the past year, but was kept well informed on events through messages sent to its members by the ISMS headquarters office and the ISMS legal counsel.

Although chiropractic activities have been relatively dormant, the ISMS must continue to be alert. Therefore, this Committee should be continued.

R. A. BERGER, M.D., *Chairman*

MEDICAL ASSISTANTS' ADVISORY COMMITTEE

It is a pleasure to report on the activities of the youngest paramedical group under the sponsorship of the Iowa State Medical Society. It has shown steady growth and rare enthusiasm, and we feel it has now reached maturity.

The fifth annual convention of the Iowa Association of Medical Assistants was held in Fort Dodge this past year, and it was well attended. The second workshop, held at S.U.I. last fall by the Extension Department of the University, had a full enrollment of 50. The Medical Assistants' booth at the ISMS Annual Meeting last spring was well attended, and considerable interest in it was shown by members of the medical profession. This will be the third year that the organization will have a booth at the ISMS Annual Meeting, and I recommend that all doctors in attendance take a few minutes to visit the display and note the progress the group has made.

The Medical Assistants have arranged for a placement bureau in connection with the Iowa State Employment Service, and all of the members of the State Medical Society have received notice of this development, together with a brochure.

We consider this a fine group, worthy of the support of every doctor in the Iowa State Medical Society.

FLOYD A. SPRINGER, M.D., *Chairman*

COMMITTEE ON SCIENTIFIC EXHIBITS

The Committee wishes to extend its sincere thanks to the many exhibitors who participated in the scientific exhibition at the 1960 Annual Meeting. That unusually fine display consisted of 41 outstanding exhibits, utilizing 3,000 square feet of floor space. We are cognizant and deeply appreciative of the time, effort and financial investment that went into the preparation of those excellent pieces of work.

At the time this report is written, the Committee is

busily engaged in making arrangements for the exhibition at the 1961 Annual Meeting, and the indications are that another interesting group of presentations will be on display. We hope all officers, delegates and members of the Society will visit the Scientific Exhibit Section at the Annual Meeting, and will carefully review the displays, so that the exhibitors will be at least partially repaid for their efforts.

JAMES T. MCMILLAN, M.D., *Chairman*

RELATIVE VALUE STUDY COMMITTEE

In April, 1959, the House of Delegates authorized the conduct of necessary studies and investigations preliminary to the elimination of discrepancies in the Iowa Unit Fee Index. Last March, in pursuance of that directive, the Relative Value Study Committee mailed a questionnaire furnished by the AMA to every member of the State Medical Society, asking that the physician list his usual charges for medical and surgical services, without identifying himself other than by indicating his type of practice and location.

The survey was completed by June 1. Over 70 per cent of the questionnaires were returned, but about 8 per cent had to be discarded as worthless. Since that time, all of the data have been transferred to IBM cards, and the study is now being made. The coded and assembled material promises to furnish us valuable information for the future, and has also brought out some facts that had not been anticipated.

It is hoped that this information will be available for presentation in a supplemental report to the House of Delegates in April of this year.

FRED STERNAGEL, M.D., *Chairman*

COMMITTEE ON AUTOMOTIVE SAFETY

The Committee on Automotive Safety has met twice during the past year to study problems related to automotive safety, and has served in an advisory capacity to the president of the Society in formulating the program on automotive safety which is to be presented on Monday, April 24, during the 1961 ISMS Annual Meeting.

Prior to last year's Annual Meeting, an AMA booklet entitled MEDICAL GUIDE FOR PHYSICIANS IN DETERMINING FITNESS TO DRIVE A MOTOR VEHICLE was distributed to each member of the ISMS, and then was distributed to each member of the Iowa Legislature, in order to acquaint them with various problems relating to automotive safety.

The Committee has discussed several methods of determining which individuals are physically fit to drive a motor vehicle, and ways in which restrictions could be established in licensing procedures. Information from the Pennsylvania Medical Society on a safety program that it developed in cooperation with the Commonwealth Secretary of Health was obtained and is under study by the Committee.

Current literature on automotive safety has been made available to members of the Committee for their study.

On April 22, 1960, representatives from the Automotive Safety Committee participated in a meeting of the Iowa Highway Safety Committee, a subcommittee of the Iowa Highway Study Committee that had been established by the Iowa Legislature to function between sessions. The meeting proved to be very satisfactory. Numerous problems were discussed, including apprehension and prosecution of drunken drivers, revocation of the licenses of individuals with disabling diseases, and of individuals who are not competent to drive motor vehicles, and promotion of necessary safety features as standard automobile equipment.

The Committee reaffirmed a past action favoring passage of an "implied consent" law, and recommended that the Legislative Committee promote passage of such a bill if one is introduced during the 1961 legislative session. It was also agreed that if such a bill is introduced, representatives of the Automotive Safety Committee should arrange to appear before the appropriate committee of the Iowa Legislature to discuss its merits.

The Committee has made contact with the new Commissioner of Public Safety for the State of Iowa, and expects to continue to maintain a liaison and work closely with the commissioner and with the Department of Public Safety on matters of mutual interest.

E. H. BARG, M.D., *Chairman*

OSTEOPATHIC COMMITTEE

In carrying out its functions and duties, the Osteopathic Committee conducts a continuous study of the osteopathic problem at the national, state and local levels. During the past year, the Committee and its legal counsel have given advice and consultation in a number of cases where osteopathic problems existed. In so doing, the position of the AMA regarding ethical relationships between M.D.'s and D.O.'s has been used as a guidepost.

We hope that members of the Iowa State Medical Society will continue to keep the Committee apprised of any problem in this area, thus enabling it to protect the Society against further inroads into the practice of medicine.

Much of the Committee's time during the past year has been devoted to formulating plans for meetings of the M.D./D.O. Liaison Committee, and acting in an advisory capacity to that Committee. We wish to call attention to the separate report of the M.D./D.O. Liaison Committee immediately following this one, and we ask that it be read *in conjunction* with this report.

J. M. RHODES, M.D., *Chairman*

M.D./D.O. LIAISON COMMITTEE

The M.D./D.O. Liaison Committee has held three meetings with representatives of the osteopaths during the past year, to consider problems of interest.

Many different subjects have been discussed by this group, in a very frank manner. A great deal of time has been spent considering the possibility of osteopathic and medical schools' being inspected by the same agency. This would appear to be one of the primary steps in working toward a closer relationship between the two groups. The Committee is of the opinion that steps in this direction should be handled in proper sequence at the state level, rather than at the national. From the action recently taken by the osteopathic organization in California, it would seem that differences can best be reconciled at the state level.

The November, 1960, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY included an "In the Public Interest" (green) page outlining the ISMS position on osteopathy. That article, entitled "Doctors of Medicine Are Willing to Help Osteopaths Solve Their Problems," sets forth in a concise statement the pres-

ent situation in Iowa regarding doctors of medicine and doctors of osteopathy. Information such as this should be widely disseminated to provide education for both groups.

It is recommended that this Committee be continued, so as to serve as a clearing house and sounding board for still-divergent views on M.D./D.O. problems, within the limits of medical ethics.

J. M. RHODES, M.D., *Chairman*

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

As a whole, the Committee has been relatively inactive during the past year. Several members, however, have provided definite service in their local areas, assisting the civil defense directors with the over-all plans of those specific areas. When materials have been made available, it has been forwarded to area chairmen for their use.

The chairman of the Committee attended the Annual Civil Defense Conference, at Minneapolis, during the month of September. A review of that meeting was provided to other physicians who were interested.

The film on disaster planning which was produced by the ISMS several years ago has been shown quite extensively throughout the state during the past year. Hospitals in Minnesota, Illinois and Indiana have also borrowed it for showings to their staff personnel.

There were no meetings held in conjunction with the Iowa Interprofessional Association during the past year, but it is felt that such meetings, once or twice each year, would be of value.

Appreciation is expressed to all who have worked within the province of this Committee during the past year.

M. E. ALBERTS, M.D., *Chairman*

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

The Advisory Committee to the Woman's Auxiliary reports that Iowa's organization for doctors' wives has had another successful year, one that represents continued activity in its assigned area. In all counties where there are Auxiliary members, these ladies have given excellent cooperation and assistance to both local and state medical societies. In all instances, the county chapters and the state Auxiliary have obtained medical society approval, at their respective levels, before undertaking any new projects. Since the aims, challenges and problems of the Auxiliary are the same as those of the medical profession, its help has been solicited more and more frequently each year.

Although there are members-at-large in each of the counties where an Auxiliary chapter hasn't yet been organized, those members could help more effectively if they were to form a group. Thus, it is hoped that the county medical societies that still lack Auxiliaries will give encouragement and assistance in the formation of local chapters during the coming year. Each Auxiliary assists in the accomplishment of important medical-society objectives on the county level, and when the State Auxiliary has a chapter in every county, it can be expected to do its tasks superlatively well.

It has been the Committee's desire, throughout the year, to inform the Auxiliary on the problems confronting medicine today, for doctors' wives can do much to supplement the doctors' attempts to preserve the freedom of medicine. Also, through the Auxiliary we have endeavored to channel accurate health information to other groups.

Exceeding the goal that it had set for itself, the Iowa Auxiliary contributed more than $1 per member, during 1960, to the American Medical Education Foundation, by means of individual donations, fund-raising projects carried on by some of the chapters, and the use of memorial and appreciation cards. The members expect at least to double their contribution during the coming year. Almost 100 per cent of this year's contributions have been earmarked for the S.U.I. College of Medicine.

Handicapped craft sales continue as a major project for the larger Auxiliary chapters. Sales were held during the past year in Waterloo, Fort Dodge, Des Moines, Dubuque, Sioux City and Spencer (at the Clay County Fair). This was the tenth year of the Auxiliary's cooperation with the Iowa Society for Crippled Children and Adults in the sale of articles made by handicapped workers throughout the state. The chapter in the county where the sale takes place arranges for the sale location, for the necessary publicity, and for recruiting Auxiliary members to act as saleswomen. The proceeds—sometimes exceeding $1,000 per sale—go to the individuals who made the articles.

The Health Careers Committee, formerly the Nursing Careers Committee, continues with its recruitment program, now broadened to include finding candidates for the technologies and other allied occupations, as well as for nursing. A survey has shown that many of the current student nurses have been members of the Future Nurses Clubs that are sponsored by the Auxiliary. The annual Future Nurses Club convention, a one-day meeting, was held in 1960 at Fort Dodge, with both hospitals cooperating with the Webster County Auxiliary to make it a success for the 117 delegates who attended.

The Auxiliary's Health Educational Loan Fund is now "big business." Money from it has been loaned to a total of 42 girls—two of them medical-technology trainees, and the rest student nurses. Eleven new loans were granted in 1960. Twelve recipients are still in training, and the remaining 19 have completed their training and are repaying their loans. The Fund is supported by an assessment of 50 cents per member, by memorial gifts and by other contributions. The benefit dance which has become a traditional feature of the ISMS Annual Meeting increased the fund by approximately $600 last year. More than the usual number of requests for loans, plus the increasing cost of training, are intensifying the Auxiliary members' efforts to raise more money for this purpose. Many of the county Auxiliaries also have local scholarships and loan funds.

The Auxiliary's Community Service Committee is again sponsoring the American Association of Physicians and Surgeons' Essay Contest, with the approval of the ISMS Executive Council. The topics from which the contestants may choose are "The Advantages of Private Medical Care" and "The Advantages of the American Free Enterprise System Over Communism." In the counties where Auxiliaries sponsor the contest, the medical societies assist with the judging and, in most instances, provide the prizes at the local level. In 1960, the first-place winner in the state-wide contest won tenth prize at the national level.

The Auxiliary's Community Service Committee again presented an award for community health service in 1960. This presentation is designed to honor an individual, other than a physician's wife or a professional

health-service worker, who has excelled in health or health-education activities. Each county chapter is urged to make such an award and to nominate the recipient for statewide recognition.

The Auxiliary has also undertaken to help meet world health needs through providing, packing and shipping drug samples, vitamin samples, bandages and like materials to a leprosy colony in Thailand, a project which had been highly recommended by the National Auxiliary.

The WOMAN'S AUXILIARY NEWS appears first, each month, as a part of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, and then is distributed separately, in pamphlet form, to the members of the Auxiliary throughout the state. It continues to be an excellent source of information for the members, and through it the chairmen of committees can alert members to new projects or to the tasks on which additional work needs to be done. Auxiliary officers in other states and at the national level ask to be put or to be kept on the mailing list, thus indicating that the WOMAN'S AUXILIARY NEWS is a top-ranking publication in its field.

The Auxiliary's Legislative Committee has worked very hard during the past year, and has disseminated information on health legislation not only to the Auxiliary members but to the members of other organizations as well. This committee has cooperated in every way possible with the ISMS, and has worked directly under the ISMS Legislative Committee. As usual, the Auxiliary's Legislative Committee played a big part in the get-out-the-vote campaign preceding both the primary and the general election last year, and it has been tireless in working for good health legislation. In addition, it has supported legislation for improved community living.

Space limitation prevents our detailing the activities and achievements of the other Auxiliary committees, but all of them have done conscientious, worthwhile work.

The Auxiliary has been represented at Health Education Workshops, at meetings of the Iowa Council for Better Education and the Iowa State Education Association, and at the meetings of professional auxiliaries in allied fields. The Auxiliary president participated in the Senior Day program at the S.U.I. College of Medicine last May. The Auxiliary was also represented at United Nations Day observances, and assisted in the arrangements for the Foreign Student Week-end held in Des Moines, and participated as hostesses.

Membership in the Iowa Auxiliary has reached an all-time high. Furthermore, one new county chapter has been organized within the past year, two others are preparing to organize within the near future, and there are more than 100 members-at-large who constitute nuclei for still more chapters. The wives of members of the Student American Medical Association at the S.U.I. College of Medicine have organized an Auxiliary under state sponsorship, which provides an excellent opportunity for orientation.

OTTO N. GLESNE, M.D., *Chairman*

COMMITTEE ON NURSING EDUCATION AND SERVICE

The Committee on Nursing Education and Service has held informal meetings during the past year. We are awaiting the development of plans for a formal meeting that is scheduled for early spring.

Since it is the feeling of the Committee that better relations between physicians and nurses are of prime importance in the improving of patient care, suggestions are solicited from both professions.

The Committee has been represented at all meetings of the Iowa Nursing Careers Committee, which is made up of representatives of all organizations interested in the recruitment of nursing students.

We cooperated in a recent survey "The Variations of Opinions Towards Advanced Nursing Education as Expressed by Doctors of Medicine in the Middle West Community" in which 65 per cent of those contacted participated. The survey results are being readied for publication, and the report will be available to physicians.

The Committee would like to be of service to the public, and to the nursing and medical professions in helping to solve the problem of securing more nurses, and in making an effort to keep nurses in Iowa.

HENNING W. MATHIASEN, M.D., *Chairman*

HISTORICAL COMMITTEE

The Historical Committee has not been overly active during this past year, but the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY has published a noteworthy historical manuscript, "120 Years of the Medical Profession in Cedar County, Iowa," by H. E. O'Neal, M.D., and Mrs. Vada Yule Klith. This is a very interesting account, since it not only names and recites the accomplishments of the doctors who have served that area, but recreates the very atmosphere in which they lived and practiced medicine.

Members of the Committee have written letters to doctors in other counties, in attempts to interest them in writing similar accounts, but thus far there haven't been any responses.

C. A. BOICE, M.D., *Chairman*

COMMITTEE ON GROUP INSURANCE

The Committee on Group Insurance was requested by the ISMS president to make a study of group retirement programs which might be applicable to physicians in view of legislation periodically introduced in Congress relating to this matter. Such proposals are designed so as to provide a tax credit for income set aside (within certain limits) each year for retirement purposes by individuals who are self-employed and are not covered under Social Security.

The Committee reviewed existing programs which it felt might be advantageous to the Society both from the standpoint of safety and from that of cost. The Committee was, however, in complete agreement that a program of this type would be of little interest to the members of the Society unless legislation were actually passed, providing the tax relief. After a complete review, the following recommendation was submitted to and approved by the ISMS Executive Council:

"The Committee should be directed to continue its study of this type of program and keep in close touch with the progress of Keogh-type legislation. The Committee feels that any action on the establishment of a program should be deferred until Congress takes action on this matter. If any such legislation is passed, the Committee shall then meet to discuss recommending the adoption of a group retirement program for Iowa physicians."

Group Accident and Sickness Disability Insurance. Holmes, Prouty, Murphy & May report that no problems have been encountered on the disability cover-

age which has been in effect for several years for members of the State Medical Society, and that claim experience is satisfactory.

Group Life Insurance. The Bankers Life Company, carriers of the ISMS group life program, submitted a request through Holmes, Prouty, Murphy & May that consideration be given to changing the eligibility requirements for new Society members to be enrolled in the program. The carriers were concerned about the matter since very few new members were taking advantage of the coverage, and furthermore, those who did apply were substandard risks or uninsurable.

The Bankers Life Company request was to the effect that individuals who are uninsurable or substandard risks should not be granted coverage unless 50 per cent of the new members of the Society enrolled in the plan within a 12-month period. After discussing this problem in detail, the Committee recommended to the Executive Council that Holmes, Prouty, Murphy & May should be asked to contact new members promptly to acquaint them with the coverage available, and that action on the Bankers Life Company's request should be deferred for at least six months, at the end of which time the action could be reviewed. The Executive Council approved the Committee's recommendation.

Members of the Committee on Group Insurance feel that the State Society can be of service in this connection by advising new members of the Society as to what various group insurance programs are available, and by acquainting them with the advantages of enrolling in these programs.

ISMS Group Blue Cross-Blue Shield. The experience with the Statewide Physicians' Blue Cross and Blue Shield Group has been satisfactory in spite of rising hospital, medical and surgical costs. Because of this satisfactory experience, no change in the original premium rates has been necessary. An open enrollment period was in effect during November, and several new applications were received, as well as some transfers from county groups to the statewide group.

During the past year, the Committee reviewed several proposals submitted by Holmes, Prouty, Murphy & May dealing with accidental death or dismemberment insurance for members of the Iowa State Medical Society. This coverage provides for the payment of benefits in case of accidental death or dismemberment, and includes the wife of the member, if desired. After studying the various plans, the Committee recommended to the Executive Council that the Bankers Life Company proposal be accepted. The recommendation was approved, and the enrollment program will be undertaken within the near future.

W. O. PURDY, M.D., *Chairman*

IOWA BAR LIAISON COMMITTEE

The Iowa Bar Liaison Committee has been in contact with the comparable committee of the Iowa Bar Association, and has observed recent developments as regards the "Impartial Medical Witness Plan." At this time, there is no evidence of any activity designed to put this plan into effect. We shall continue to investigate the practicability of the "Impartial Medical Witness Plan."

Two members of the Committee attended the annual medical-legal seminar sponsored by the Webster County Medical and Bar Associations. In addition, as further evidence of the continued good relations between the Iowa Bar Association and the State Medical Society, there was a joint meeting of the Dubuque County Bar and Medical Societies during the past year. The two groups also meet annually in Pottawattamie County, and a meeting between the two groups in Polk County is to be held in the spring.

Meetings of this type, it is felt, afford an excellent opportunity for the discussion of mutual problems.

THOMAS A. BURCHAM, JR., M.D., *Chairman*

MEDICARE CLAIMS COMMITTEE

During the past year, members of the Medicare Claims Committee have worked closely with the ISMS staff to provide medical judgment on Medicare claims. As in previous years, the number of claims reviewed by the Committee has approximated 5 per cent of the total number of claims processed. Few problems have been reported, and the Medicare program in Iowa seems to be functioning well.

Because of its experience in claims review, the Committee has been charged with the additional responsibility of reviewing Vendor Payment claims referred to it by the State Department of Social Welfare. Several claims from this program have been studied, and appropriate recommendations have been made. Since this has been a somewhat difficult task to undertake in addition to its regular duties, the Committee feels that some study should be given to the establishment of a special committee for review of Vendor Payment claims.

The Medicare Claims Committee welcomes any comments or criticisms concerning its review and the recommendations it has made on any claim referred to it.

A. B. PHILLIPS, M.D., *Chairman*

COMMITTEE ON PARAMEDICAL SERVICES

The Committee on Paramedical Services has continued to meet with representatives of the Iowa Chapter of the American Physical Therapy Association to discuss specific problems and areas of mutual concern.

Efforts have been made to disseminate information on the true picture of the qualifications and training of bona fide physical therapists. In this connection, an editorial published in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY (49:357, June, 1959) was made available to and reprinted by the American Physical Therapy Association, and distributed to its members.

The Committee is highly sympathetic with the desire of physical therapists to prevent the term *physical therapy* from being used by less qualified persons. It is hoped that this can be accomplished by voluntary measures, without a resort to specific legislation. The present policy is to give complete encouragement and cooperation to the physical therapists in solving their problem in a voluntary manner. At a meeting of the Committee at which members of the Iowa Chapter of the American Physical Therapy Association were present, the above information was relayed to them for their consideration, and they were assured of the State Medical Society's continued cooperation in this field.

A study has been made of the report of the AMA committee which was appointed to study the relationship of medicine with allied health professions and services. This valuable information will be extensively utilized in dealing with problems arising within the province of the Committee on Paramedical Services.

F. E. THORNTON, M.D., *Chairman*

POLICY EVALUATION COMMITTEE

The Policy Evaluation Committee, created on authority of the Board of Trustees May 13, 1959, in conformance with an action of the House of Delegates in session April 22, 1959, has held two meetings during the year to consider further the monumental task assigned to it.

According to a directive of the 1959 House of Delegates, the Blue Shield 65 and Middle Income contracts (B-400) were to be studied for a period of two years. At the end of one year, a progress report was to be presented to the House of Delegates as to the functioning of these Blue Shield programs. In addition, a reevaluation report was to be submitted at the end of two years. As instructed by the House, this Committee submitted a progress report, and it was received by the 1960 House of Delegates. (See "Progress Report: ISMS Policy Evaluation Committee," in the April, 1960, JOURNAL OF THE IOWA STATE MEDICAL SOCIETY (50:218-223).)

The 1960 House of Delegates accepted this report as an interim informational report, and recommended that the Committee continue its study on a broad, philosophical basis. Since the last session of the House, members of this Committee have both individually and collectively delved into all facets of the problem in great detail. Much time has been devoted to this study, and full participation by each member of the Committee has made the task more enjoyable and productive.

A final report is now being prepared, based on the two-year, intensive study by the Committee. In addition to the report prepared for submission to the House of Delegates in April, similar material will be provided the entire membership of the Society in the JOURNAL, prior to the Annual Meeting.

W. L. DOWNING, M.D., *Chairman*

BLUE SHIELD UTILIZATION AND FEE COMMITTEE

By action of the Executive Council of the Iowa State Medical Society, this Committee was formed to consider fee and claim problems in connection with the Blue Shield "Blue Chip" program.

This new Committee was approved according to the following plan:

"A state fee and utilization committee is to be created and appointed by the State Medical Society. This committee will be composed of 11 members—Blue Shield participating physicians—one designated from each Councilor District of the State Medical Society. In each case to be referred, a subcommittee from this committee will be appointed, composed of three members, but excluding the member in the Council District where the appealing physician resides. These three members will be appointed as follows: one by the State Medical Society, one by the appealing physician, and one by the chairman of the Blue Shield Board of Directors. This committee will then determine the fee to be paid by Iowa Medical Service, subject to approval of Iowa Medical Service."

The method of selecting the members who serve on the state committee is the same as the method utilized by the State Society in selecting physicians to serve on the ISMS Grievance Committee. In addition, although the subcommittee is appointed by the parties involved, once the subcommittee has been selected, the members do not represent an interest, but adjudicate the claim on the basis of their personal medical judgments.

Three claims have been referred to the State Medical Society by Iowa Medical Service, and they have been dealt with according to the established procedure.

IOWA MEDICAL MILK COMMISSION

The Iowa Medical Milk Commission has had no meeting during the past year, and no matters were referred to it.

EDMUND G. ZIMMERER, M.D., M.P.H., *Chairman*

PUBLICATIONS COMMITTEE

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY has two important, though probably not unsolvable, problems.

One of them, it shares with all of the other publications in the medical field. Pharmaceutical advertising has been on the decline throughout the past year, and though the JOURNAL is still self-supporting, it is less profitable than it was. There are a number of explanations for this phenomenon. First, the Kefauver Committee's investigations singled out the drug manufacturers' promotional expenditures for special attack. Second, the federal Food and Drug Administration is submitting new products to an increasingly careful scrutiny, is passing upon ads before publication and has begun insisting that advertisements, other than mere reminders, must contain full information on dosages, indications and counterindications, possible side-effects, etc., and the advertising agencies are finding it difficult if not impossible to find room for all of the necessary fine print in their displays. Third, there has been a decline in the numbers of new products introduced.

It seems reasonable, of course, to expect that the flow of new ethical pharmaceuticals will increase again after a short time, and that the drug houses will feel that they must advertise them, despite Senator Kefauver and the F.D.A., but members of the Iowa State Medical Society can help their JOURNAL stay in the black by reminding the detail men who call upon them that they prefer seeing ads in medical magazines, rather than direct-mail circulars cluttering their desks.

The other of the JOURNAL's problems is a relative shortage of scientific manuscripts. The number of papers presented at ISMS annual meetings has been shrinking over the past few years, and members of the Society are urged to submit the results of their investigations and surveys, and to send in reports of their more interesting cases, for publication.

Doctors who are officers of medical study clubs, county medical societies or specialty groups, it is hoped, will see some value to their organizations in securing manuscripts from the men who address their meetings and submitting them to the JOURNAL. And program chairmen for postgraduate short courses may well regard the subsequent publication of the lectures as an essential step in completing their assignments.

The Speaker explained procedures to be followed by the delegates in carrying out the business of the House of Delegates. He referred to the material contained in the delegates' packets, and announced the reference committees that would serve and the names of physicians appointed to them.

As the next order of business, United States Senator Jack Miller, of Sioux City, spoke on "The Medical Profession and Practical Politics," and showed the film "The Wisconsin Story." Senator Miller admonished physicians to take an active part in politics at all levels, and urged them to make generous contributions to candidates of their choice. He pointed out that professional people are outnumbered in terms of voters, and, therefore, that each professional person must assume a greater responsibility in political activity, as well as in underwriting campaign expenses.

Dr. W. F. Dean, age 100, of Osceola, was presented a Resolution of Commendation by the president, acknowledging him as Iowa's senior practicing physician.

A check in the amount of $15,776.82 was presented to Dr. Norman Nelson, dean of the College of Medicine, Iowa City, by Dr. George Scanlon, chairman of the Board of Trustees of the Iowa State Medical Society. This grant to the S.U.I. College of Medicine came from the American Medical Education Foundation and included over $5,000 in donations originating from Iowa.

Mrs. R. F. Nielsen, president of the Woman's Auxiliary to the Iowa State Medical Society, addressed the House of Delegates. She expressed the appreciation of the Auxiliary for the fine cooperation and support received from the officers and members of ISMS. She gave special thanks to the Woman's Auxiliary Advisory Committee.

The Speaker then called for supplemental reports, and following their presentation to the House of Delegates, referred them to the proper reference committees for study.

Supplemental Reports

EXECUTIVE COUNCIL SUBCOMMITTEE

(Referred to the Reference Committee on Insurance and Medical Service. For final action, see the report of the Reference Committee.)

The following is quoted from the Report of the Reference Committee on Articles of Incorporation and By-Laws as approved by the House of Delegates, April 27, 1960.

"Resolution No. 19, introduced by the Dubuque County Medical Society proposed that the two Delegates-at-Large who represent Blue Shield on the ISMS Executive Council should be non-voting members of that board, since they are neither nominated nor chosen by all members of the Society or by those residing in a particular district. At the hearings it was called to the attention of the Reference Committee that the procedure for nominating these Members-at-Large and their status as voting members of the Executive Council were set forth explicitly in a "Memorandum of Understanding," dated September 12, 1956, between the Iowa State Medical Society and Iowa Medical Service. Thus, a change in the status of such members would abrogate an agreement with Blue Shield.

"For this reason, the Reference Committee on Articles of Incorporation and By-Laws recommends the rejection of the Dubuque County Resolution, and recommends instead that the Executive Council be directed to renegotiate the agreement with Blue Shield on this matter so that in the future these delegates will serve in ex officio capacity without vote, and the House of Delegates will have an opportunity to approve the selection of Delegates-at-Large."

(Privilege to speak will be requested for ISMS Legal Counsel to permit him to explain provisions of the ISMS-BS Memorandum of Understanding.)

On June 30, 1960, the Executive Council designated a subcommittee of five of its members to undertake this project. As president, I have served as chairman. Other members include the president-elect; chairman, Board of Trustees; chairman, Judicial Council; and the secretary.

For several months members of the Subcommittee studied the proposal of the House of Delegates. On February 8, 1961, the Subcommittee met and reviewed in detail the ISMS-Blue Shield "Memorandum of Understanding," its origin and purpose.

It was my recommendation, and all members of the Subcommittee concurred, that no suggestions for changes in this agreement should be made at this time. The Subcommittee unanimously agreed to recommend this course of action to the House of Delegates for the following reasons:

1. Those physicians who participated in negotiating the ISMS-Blue Shield "Memorandum of Understanding" acted in good faith in an atmosphere of fairness and in the best interest of the parties involved.

2. The agreement they consummated has provided a sound basis for the establishment of excellent ISMS-Blue Shield relations. It has afforded an opportunity for organized medicine in Iowa to have a choice in selecting the candidates to be considered for election to the Blue Shield Board of Directors.

3. This inter-organizational liaison has contributed to the strengthening of Blue Shield and, within the limits of financial resources and sound prepayment practices, improvement in its coverage.

4. There is no evidence to indicate that either party to this understanding has taken undue advantage of its provisions.

5. Because of these factors, and in the interest of maintaining and improving ISMS-Blue Shield relations, the Subcommittee believes it would be imprudent to attempt to alter the mechanism for the exchange of representatives between these cooperating bodies.

Mr. Speaker, I move adoption of this report.

E. F. VAN EPPS, M.D., President
Chairman
O. N. GLESNE, M.D., President-Elect
G. H. SCANLON, M.D., Chairman of Board of Trustees
C. W. SEIBERT, M.D., Chairman of Judicial Council
R. F. BIRGE, M.D., Secretary

As part of this report Mr. Robert B. Throckmorton, ISMS legal counsel, explained the provisions of the ISMS-Blue Shield "Memorandum of Understanding."

BOARD OF TRUSTEES

(Referred to the Reference Committee on Reports of Officers. For final action, see the report of the Reference Committee.)

The Annual Report of the Iowa State Medical Society for 1960-61 was mailed to all members on April 10. A copy is also enclosed in each delegate's packet. It provides a concise analysis of Society activities. We hope each delegate was able to find time to review this material prior to the meeting. However, those who have not, please find occasion to study it carefully. It

is designed for easy reading, and will take only a few moments.

The financial statement is the final page of the Annual Report. This was not accidental. We felt the members would be in a better frame of mind to consider finances, if they first had some understanding of the myriad activities in which the Society is engaged.

Net income in excess of expenses for the year 1960 totaled $3,991.76. Except perhaps for the additional funds that may be required to carry out the King-Anderson campaign, the 1961 budget is little different from the one for 1960, although taking normal increments into consideration, these is no doubt that expenses will exceed income. It has not been the policy of the Board of Trustees to practice deficit spending, which leaves two courses of action—curtailment of activities, or an increase in dues.

It is the opinion of the Board, after taking all circumstances into account, that the latter alternative is the only logical one to be considered.

We are, therefore, recommending that the dues for 1962 be increased $10.00.

We know we have one of the outstanding medical societies in the country, and if this position is to be maintained, the Society must be adequately financed.

For several months, the Board has been studying the purchase of an insurance policy covering accidental death and dismemberment that would provide protection to members while they are engaged in the pursuit of official ISMS business, and their families.

We are submitting for your consideration a proposal prepared by Witmer, Kauffman, Evans, Inc., of Des Moines, representing Insurance by North America. This proposal would provide coverage for Society officers, committee members, delegates, or officially designated alternate delegates, and employees.

If the House of Delegates approves the Society's participation in this program, it can select a $50,000 or a $25,000 death benefit. In either case, dismemberment (loss of limb, eye, etc.) would entitle the member to one-half of the principal sum.

The annual premium charge for the $50,000 death benefit would be $1,558.00; for $25,000, it would be $779.00.

The Board believes the Society has a moral obligation to provide this protection, and accordingly recommends that either the $50,000 or $25,000 principal sum policy be approved by the House of Delegates.

The Trustees and other members of the Board will be in attendance at the hearings of the Reference Committee to which this report is referred to answer questions concerning any of the business affairs of the Society.

Respectfully submitted,
G. H. SCANLON, M.D., *Chairman*
S. P. LEINBACH, M.D.
O. D. WOLFE, M.D.
E. F. VAN EPPS, M.D.
O. N. GLESNE, M.D.
V. W. PETERSEN, M.D.
R. F. BIRGE, M.D.
H. J. SMITH, M.D.

NOMINATING COMMITTEE

On March 22, 1961, the Nominating Committee met and agreed that the following slate of candidates for office should be submitted to the House of Delegates on Sunday, April 23, 1961:

President-Elect	C. O. Adams, M.D., Mason City G. H. Scanlon, M.D., Iowa City
Vice-President	L. F. Hill, M.D., Des Moines J. M. Rhodes, M.D., Pocahontas
Trustee	G. S. Atkinson, M.D., Oskaloosa C. W. Seibert, M.D., Waterloo
Speaker of the House	C. V. Edwards, Sr., M.D., Council Bluffs C. P. Hawkins, M.D., Clarion
Vice-Speaker of the House	L. J. Halpin, M.D., Cedar Rapids F. E. Thornton, M.D., Des Moines
AMA Delegate	V. W. Petersen, M.D., Clinton D. F. Ward, M.D., Dubuque
AMA Alternate Delegate	H. W. Mathiasen, M.D., Council Bluffs E. M. Smith, M.D., Eagle Grove
Councilor—First District	R. M. Dahlquist, M.D., Decorah C. L. Kelly, M.D., Charles City
Councilor—Fourth District	M. A. Blackstone, M.D., Sioux City J. B. Dressler, M.D., Ida Grove
Councilor—Sixth District	F. G. Loomis, M.D., Waterloo C. W. Seibert, M.D., Waterloo
Councilor—Eleventh District	L. V. Larsen, M.D., Harlan R. S. Needles, M.D., Atlantic

In addition, the Nominating Committee approved the following recommendations: (1) that the names of candidates be listed on the ballot in alphabetical order, (2) that in the future, candidates for office selected at district caucuses be contacted prior to the meeting of the Nominating Committee to determine whether or not they would be willing to serve if elected, (3) that it is undesirable for the Nominating Committee to be required to submit the names of two physicians to stand for election for the office of councilor. Accordingly, the Committee recommended that the Articles of Incorporation and By-Laws be amended so that for the office of councilor there could be one or more candidates nominated.

Respectfully submitted,
O. D. WOLFE, M.D., *Chairman*
R. M. DAHLQUIST, M.D.
J. W. LANNON, M.D.
D. H. KING, M.D.
J. W. GAUGER, M.D.
R. L. WICKS, M.D.
J. J. REDMOND, M.D.
J. F. BISHOP, M.D.
E. A. LARSEN, M.D.
R. W. BOULDEN, M.D. (alternate for H. J. PEGGS, M.D.)
F. N. WEBER, M.D.

The Speaker announced that the recommendations of the Nominating Committee that concerned amendments to the Articles of Incorporation and By-Laws were embodied in other resolutions to be presented to the House of Delegates and, therefore, no action on them would be required.

The secretary of the Society reported that certain of the men chosen by the Nominating Committee to stand for election to office had communicated their desire to have their names withdrawn from the election: for the office of vice-president, Dr. J. M. Rhodes, Pocahontas; for the office of speaker of the House of Delegates, Dr. C. P. Hawkins, Clarion; for the office of councilor, 1st District, Dr. R. M. Dahlquist, Decorah; for the office of councilor, 6th District, Dr. F. G. Loomis, Waterloo; for the office of councilor, 11th District, Dr. R. M. Needles, Atlantic.

Following the presentation of nominating speeches, which were to be limited to one minute on instruction of the Speaker, the chair then asked for nominations from the floor, and there being none, he declared the nominations closed.

COMMITTEE ON LEGISLATION

(Referred to the Reference Committee on Legislation and Public Relations. For final action by the House of Delegates, see the report of the Reference Committee.)

This report cannot be a comprehensive, final summary since Congress will be in session for some time and since it is still a week or more before adjournment of the 59th Iowa General Assembly. For convenience, this supplemental report is divided into two sections.

NATIONAL LEGISLATION

The Committee on Legislation's report, as published in the HANDBOOK, adequately outlines the Administration's health care program which was introduced in the 87th Congress by Representative Cecil King (D., Calif.), and Senator Clinton Anderson (D., N. Mex.).

Available information would seem to indicate that these proposals will not be acted upon this year. However, rumors persist in Washington and elsewhere that the Administration will push for passage this session. In any event, it remains the responsibility of each individual physician to keep informed on all aspects of such legislation and to be ever ready for immediate action when necessary.

As you may know, a special committee has been appointed which will be responsible for the over-all planning for the State Society's opposition to the King-Anderson Bill. A representative of the Committee on Legislation has been designated to serve on this special committee to help coordinate the legislative aspects of the campaign.

One of medicine's best weapons in opposing the inclusion of health care of our senior citizens under the Social Security mechanism is, of course, the Kerr-Mills Law (Medical Aid to the Aged). States have moved surprisingly fast in putting into motion proper implementation of this program. For the information of the House, we have determined the status of this bill in other states.

Kerr-Mills Box Score

Program in effect: Ky., Mich., Okla., Mass., N. Y., Wash., W. Va.	7
Law passed: Ark., Ga., Ind., Idaho, N. Dak., Tenn., Utah	7
No bill necessary: Md., Miss., Va., N. Mex.	4
*Bill introduced: Calif., Conn., Ill., Iowa, Kan., Me., Minn., Nebr., N. H., N. J., N. Car., Ohio, Ore., Texas, Wis.	15
Legislation drafted: Del., Mo., Pa., S. Car., Vt.	5
Under study: Alaska, Colo., Hawaii	3
Legislature not in session yet, but legislation planned: Ala. (May), Fla. (Apr. 10), La. (May)	3
No action expected: Nev., R. I., Wyo.	3
1961 Legislature adjourned without passing: Ariz., Mont., S. Dak	3
	50

STATE LEGISLATION

Medical Aid to the Aged. Through periodic LEGISLATIVE BULLETINS, the Committee on Legislation has reported on the progress of this and other legislation of interest to the medical profession. After considerable debate, the House of Representatives passed a very satisfactory bill by a wide margin. The bill is now on the Senate Sifting Committee Calendar and should come up for debate during the ISMS annual meeting.

It now appears that the measure will pass the Senate by a comfortable margin, with at least two acceptable amendments. This will necessitate further action by the House during the closing days of the session.

Prospects for obtaining an appropriation for the MAA program are now extremely dim, for it has been determined to hold the line against any tax increases. This virtually precludes any funds for new programs. The ISMS, with all other health groups, has urged passage of the MAA bill even if funds will not be available to implement the program until the next General Assembly meets two years from now. We feel that enactment of sound enabling legislation will tangibly demonstrate the desire of the people of Iowa to solve the problem of health care for the aged on the state and local level. We will continue to press for an appropriation, but respect the determination of the legislature not to indulge in deficit spending.

The physicians of Iowa are entitled to take considerable satisfaction in the fact that the vast majority of the members of the General Assembly have already demonstrated their support of the several basic principles formulated and endorsed by Iowa physicians at district meetings last December. This will undoubtedly have a beneficial effect on the Vendor Payment Program, as well as on the MAA program when funds are available. It is entirely possible that the strenuous effort put into our legislative program this year may prove to have resulted in a significant victory in the struggle between freedom and socialism as they pertain to the practice of medicine.

Animals for Research. The House of Delegates, at its meeting last year, instructed the Iowa State Medical Society to support appropriate legislation to provide animals for research. This recommendation was carried out when the Governor signed into law a bill making unlicensed and unwanted dogs available for scientific research. The State Society actively supported this bill against violent opposition. This satisfactory piece of legislation should contribute very greatly to the advancement of medicine in the future.

Radiation Control. Legislation to establish a state regulatory system to permit transfer to the state of a part of the existing federal atomic energy program has been supported in accordance with action taken by the Executive Council. This bill is expected to pass the House within the next day or two, in reasonably acceptable form. It is not certain that time will permit the Senate to take action prior to adjournment. The Committee on Legislation recommends that a special committee be appointed to consider all aspects involving the field of radiation and radiation hazards.

Automotive Safety. A bill supported by the Automotive Safety Committee of the ISMS to make mandatory the suspension of drivers' licenses for refusal to take blood tests for OMVI passed the House of Representatives but has not yet received Senate action.

Salaries. The ISMS has supported salary increases for the commissioner of public health and the state medical librarian. The departmental appropriation bill has not, as of this writing, been filed, but we are hopeful that both will receive increases.

Other Bills of Importance. For the past few sessions, there have been an increasing number of bills introduced into the legislature which deal with the health field. Your Committee continues to review all legislation which may be of significance to the medical profession. During this session bills dealing with hospitals, mental health, nursing homes, State Board of Health, State Board of Social Welfare, Workmen's compensation, and many other subjects, have been screened by the Committee.

* Of states with bills introduced, Kansas, Nebraska and New Jersey have considerable gubernatorial opposition, so do not have much expectation of passage.

The Committee wishes to express its thanks to the 99 legislative contact men, who have never failed to respond when called upon for assistance. This line of communication has proved invaluable in carrying out the duties of the Committee.

N. W. IRVING, M.D., *Chairman*
H. E. WICHERN, M.D., *Co-Chairman*
O. N. GLESNE, M.D.
M. O. LARSON, M.D.
J. E. KELSEY, M.D.
J. E. BLUMGREN, M.D.
R. L. WICKS, M.D.
FRED STERNAGEL, M.D.
V. W. PETERSEN, M.D.

NECROLOGY COMMITTEE

(The Speaker asked the members of the House of Delegates to rise during reading of the names of members of the ISMS who had died during 1960. The list appears on page 453 of this issue of the JOURNAL.)

ARTICLES OF INCORPORATION AND BY-LAWS

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the Reference Committee.)

The House of Delegates, in session April 27, 1960, recommended that an appropriate committee of the Society be asked to study and report to the House of Delegates in 1961 its opinion concerning the advisability of changing the name of the Iowa State Medical Society to remove any suggestion that the Medical Society is a tax-supported state institution.

On July 14, 1960, the Public Relations Committee, after considering the ramifications of a change in name, recommended a change in the name of the Iowa State Medical Society, preferably to Iowa Medical Society.

Again on October 18, 1960, the Public Relations Committee reviewed its previous recommendation to the Committee on Articles of Incorporation and By-Laws to change the Society's name. This was on the agenda in order to obtain an expression of opinion on this subject from an official of the American Medical Association who was in attendance. The AMA spokesman reported that a change in the name of the Pennsylvania Medical Society from Pennsylvania State Medical Society had worked very well and had provided an opportunity to place the name, as well as a description of the functions of the Society, before the people of that state. The Committee also noted that the Iowa Dental and Nurses Associations have dropped "State" from their corporate titles.

The Committee agrees with the recommendation of the Public Relations Committee.

The Committee considered a recommendation from the Nominating Committee that the Articles of Incorporation and By-Laws be amended so that for the office of councilor there could be one or more candidates nominated. The Committee on Articles of Incorporation and By-Laws agrees with this recommendation.

In addition, the Committee on Articles of Incorporation and By-Laws recommends that the entire method of selecting and electing councilors be studied. It questions the correctness of permitting representatives from all of the districts to participate in the selection of candidates who will stand for election to the office of councilor from a specific district, as well as permitting all members of the House of Delegates to participate in the election of a councilor from a specific district.

In this connection, the Committee poses these questions for the consideration of the committee that may be appointed to study the method of selecting and electing district councilors: (1) Should councilor nominees to represent a specific district be selected by the delegates from that district or by the physician members who reside therein? (2) Should the participation in the election of a councilor from a specific district be limited to the delegates from that district or should the entire membership of the House of Delegates be eligible to take part? (3) Under the present system, isn't it conceivable that a majority of the members representing other districts could out-vote a district in the selection of its councilor?

The Committee recognizes that if this study should result in the development of a proposal for further changes in the election mechanism for the office of councilor, that further amendments to the Articles of Incorporation and By-Laws will be necessary.

The Committee considered the question of whether or not a county society that has been amalgamated with another is entitled to have a delegate or delegates to the House of Delegates. This was prompted by the joining together of the Polk and Warren County Medical Societies on January 18, 1961. It is the opinion of the Committee on Articles of Incorporation and By-Laws that it is the responsibility of the Judicial Council to interpret the sections of the Articles of Incorporation and By-Laws that pertain to this matter. However, in reviewing the sections of the Articles of Incorporation and By-Laws which pertain to representation in the House of Delegates from county societies (including those that are hyphenated or amalgamated) inconsistencies in the existing Articles of Incorporation and By-Laws were noted. These inconsistencies involve the language of the By-Laws, Chapter III, Section 3, and Chapter IX, Section 10. To accomplish the changes in the Articles of Incorporation and By-Laws that the Committee desires, the following resolutions are presented:

RESOLUTION AMENDING THE AMENDED AND SUBSTITUTED ARTICLES OF INCORPORATION OF IOWA STATE MEDICAL SOCIETY

Resolved, That Article I of the Amended and Substituted Articles of Incorporation of Iowa State Medical Society, as amended, be and it hereby is amended by eliminating the word "State" from the name of the corporation so that the first clause of Article I shall read:

"The name of this corporation shall be the 'Iowa Medical Society.' "

Be It Further Resolved, That the Amended and Substituted Articles of Incorporation of Iowa State Medical Society, as amended, be and they hereby are amended by deleting the word "State" from the term "Iowa State Medical Society" wherever the term now appears in said Articles so that henceforth the term as it appears in said Articles will be "Iowa Medical Society."

Be It Further Resolved, That the Chairman of the Board of Trustees and the Secretary of Iowa State Medical Society be and they hereby are authorized and directed to sign, acknowledge, record and publish the foregoing Amendments as the Sixth Amendments to the Amended and Substituted Articles of Incorporation of the Iowa State Medical Society and to do all other things required by law to execute, complete and place in lawful effect said Amendments.

RESOLUTION AMENDING THE AMENDED AND SUBSTITUTED BY-LAWS OF IOWA STATE MEDICAL SOCIETY

Resolved, That the By-Laws of Iowa State Medical Society, as amended, be and they hereby are further amended by eliminating the word "State" from the term "Iowa State Medical Society" so that wherever said term now appears in the By-Laws it will henceforth appear as: "Iowa Medical Society."

Be It Further Resolved, That Section 2, Chapter IV, of the By-Laws of Iowa State Medical Society, as amended, be and

it hereby is further amended by deleting the next to the last sentence therefrom and by substituting in lieu thereof the following:

"No later than fifteen (15) days prior to the annual meeting, the Committee shall report its official ticket containing the names of one or more candidates for each vacancy in the office of Councilor and two or more candidates for each other office to be filled at the annual meeting."

Be It Further Resolved, That Section 10 of Chapter IX of the By-Laws of Iowa State Medical Society, as amended, be and it hereby is amended by deleting the first sentence therefrom and by substituting in lieu thereof the following:

"Some time in advance of the annual meeting of the Society each component society which has made its annual report and paid its dues shall be entitled to elect one delegate and one alternate delegate from each County within the component society to represent it in the House of Delegates of this Society."

Be It Further Resolved, That the Chairman of the Board of Trustees and the Secretary of the Iowa State Medical Society be and they hereby are authorized and directed to sign, acknowledge, and publish the foregoing Amendments as the Sixth Amendments to the By-Laws of the Iowa State Medical Society, as amended, and to do all other things required by law or otherwise to execute, complete and place in lawful effect said Amendments.

P. F. CHESNUT, M.D., *Chairman*
E. G. KETTELKAMP, M.D.
R. H. KUHL, M.D.
J. S. MCQUISTON, M.D.
G. H. PESTER, M.D.

SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

(Referred to the Reference Committee on Miscellaneous Business. For final action, see the report of the Reference Committee.)

Since publication of this Committee's report in the HANDBOOK, a meeting of the Committee has been held at which time a motion was approved to carry out a program for state-wide case finding of phenylketonuria. This program is as follows:

I. *Case Finding.*

A. Appropriate urine tests (10 per cent ferric chloride, Phenistix, or dinitrophenylhydrazine) should be carried out for all infants under six months of age when they are seen by medical personnel, whether in the private office of a physician or in a child health clinic.

B. Appropriate urine tests should be used on at least one occasion for all older children regardless of symptoms.

C. All children in special classes for mentally retarded should be given a screening test, accomplished under medical supervision.

D. Siblings and cousins of known cases of phenylketonuria should be carefully checked by means of appropriate urine screening tests.

E. Other high-risk groups such as children with convulsive disorders or eczema should also be especially scrutinized by means of urine screening tests.

II. *Confirmation of Diagnosis.* Each child with a positive urine test should have a confirmatory blood phenylalanine test. This test can be provided free of charge in the laboratory of the Child Development Clinic, University Hospital, Iowa City.

III. *Management.* All children detected under the age of three should be put on the low phenylalanine diet. Children over three should be individualized, depending on other symptomatology. All children placed on the low phenylalanine diet should be followed with blood phenylalanine levels at weekly intervals until the level is near normal. Thereafter, they should be followed at least every two to three months.

The State University of Iowa has the laboratory facilities and is willing to test blood samples of all children whose urines test positive for phenylketonuria. Federal money can become available to the Crippled Children's Program of the State University for use in the detection of children with phenylketonuria, and also money can be secured for the assistance of families of children who have the disease. Before the money can be obtained from the federal government, however, some type of state program must be initiated.

The Subcommittee on Maternal and Child Health recommends to the House of Delegates that the machinery for carrying out a program for the state-wide case finding of phenylketonuria be established by the individual county medical societies, with assistance from the State Medical Society.

JACK SPEVAK, M.D., *Chairman*
C. A. HANSON, M.D.
CHARLOTTE FISK, M.D.
C. P. PHILLIPS, M.D.
MADELENE DONNELLY, M.D.
D. O. NEWLAND, M.D.
W. J. BALZER, M.D.
W. B. ANDERSON, M.D.
R. P. FERGUSON, M.D.

Reports of Special Committees

POLICY EVALUATION COMMITTEE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the Reference Committee.)

The Blue Shield Policy Committee hopes that by now you have read its final report published in the April JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, reprints of which have been included in the delegates' packets, and have reread its Progress Report published a year ago. We also wish that all of you could have attended the Committee's meetings and could have studied the large amount of material surveyed by the members. Then you would realize how difficult it is to make recommendations that are entirely satisfactory to all physicians.

We regret our inability to develop some magic formula which would solve all of the problems. The Committee recognizes the sound objections to full service, to income levels and to fee-schedule inequities. But we must remember that Iowa Medical Service is both a service and indemnity program, and that in the past two years many of the inequities have been corrected.

The private practice of medicine and voluntary health insurance are going through a difficult period. If either is to survive, we in the medical profession must be willing to adjust to changes, whether they are all to our liking or not. The high and increasing cost of medical care is of concern to a large per cent of the population, and means of meeting this problem have to be found. Adequate voluntary health insurance seems the only present answer.

The Blue Plans are helping to solve this socio-economic problem, and along with the commercial carriers should be able to combat federal medicine.

The AMA and others agree that for the present the medical profession must, of necessity, remain in the insurance business. Thus, getting out of the insurance business is not the answer to the economic problem.

The members of the Committee hope that during this

session and during the Reference Committee hearings you will consult them about any matters about which you wish more information.

In conclusion, I wish to thank the Committee and staff members for their wholehearted efforts during the past two years.

W. L. DOWNING, M.D., *Chairman*

RELATIVE VALUE STUDY COMMITTEE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the Reference Committee.)

The Relative Value Study Committee has continued its study of the results of the recent survey of fees being charged by Iowa physicians. Data have been obtained which represent the responses of approximately 65 per cent of the physicians in Iowa. The Committee is moving as rapidly as possible in summarizing these results in order to carry out the assignment given the Committee by the House of Delegates.

Samplings of the survey have been studied by the Committee which reflect the arduous task that is ahead. It is the Committee's feeling that to present partial results would serve no useful purpose and, therefore, does not plan to present any figures until final results have been prepared and analyzed, and conclusions drawn. We then hope to present our findings in such a manner as to minimize and, if possible, avoid the misinterpretations, misunderstandings, and misuses of the index which have occurred in the past.

The Committee plans to move ahead by insisting on careful, complete and definitive consideration of all points, both large and small. The Committee realizes the magnitude and difficulty of its task, and hopes that within the near future it will be able to present the facts which have been reported to it through the mechanism of a state-wide survey. Your Committee is, as always, receptive to any suggestions which may be of help in completing its work.

FRED STERNAGEL, M.D., *Chairman*
C. O. ADAMS, M.D.
R. B. STICKLER, M.D.
M. J. ROTKOW, M.D.
V. K. NAKASHIMA, M.D.
R. L. KNIPFER, M.D.
D. C. KOSER, M.D.
J. M. LAYTON, M.D.
R. L. ALBERTI, M.D.

M.D./D.O. LIAISON SUBCOMMITTEE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the Reference Committee.)

On April 17, 1959, George W. Sutton, D.O., president of the Iowa Society of Osteopatic Physicians and Surgeons, wrote to Walter D. Abbott, M.D., president of the Iowa State Medical Society, in part as follows:

"While better relationships between the medical and osteopathic professions in the neighboring states of Missouri and Kansas, as well as the action of the American Osteopathic Association in July, 1958, in deleting a reference to Andrew Taylor Still in its Constitution, have been rather widely publicized, even more important in my opinion has been the better understanding of each other developed by individual members of both professions in Iowa. I would hope that this understanding has developed sufficiently to permit this Society to now propose that represenatatives of our two organizations meet from time to time to discuss health matters of mutual interest. The interchange of attitudes and information would permit the establishment of cooperative approaches to health problems and remove the possibility of misunderstandings or erroneous impressions which can otherwise arise due to a lack of communication. Such efforts would assure that health matters requiring the attention of the professions would have the benefit of early consideration and deliberations."

This letter initiated a correspondence which was continued by Dr. Abbott, his successor, John W. Billingsley, M.D., and Dr. Sutton's successor, Alan M. Nelson, D.O.

Following official action taken by the Board of Trustees of the Iowa Society of Osteopathic Physicians and Surgeons and the Executive Council of the Iowa State Medical Society, each Society designated five members to represent it on a Joint M.D./D.O. Liaison Committee as follows:

J. M. Rhodes, M.D., Pocahontas, *Chairman*
T. E. Shea, M.D., Storm Lake
W. A. Seidler, Jr., M.D., Jamaica
Robert N. Larimer, M.D., Sioux City
Homer E. Wichern, M.D., Des Moines
Ralph Jack, D.O., Ogden, *Chairman*
Clive Ayers, D.O., Atlantic
James Lott, D.O., Clarion
Roger Anderson, D.O., Sioux City
Harold Myer, D.O., Sioux City

The Joint Liaison Committee has had the full cooperation of the current presidents of the two Societies, Eugene Van Epps, M.D., and Jean F. LeRoque, D.O.

The first meeting of the Joint Committee was held on February 4, 1960, and there followed five subsequent meetings on March 10, May 12, June 23 and November 10, 1960, and March 16, 1961. The members of the Liaison Committee fully recognized that the Committee has advisory powers only, and that any policy decisions resulting from the Committee's work would have to be made by the policy-making bodies of the two professional societies. Notwithstanding this, they unanimously felt that the discussions of the Committee would be more fruitful if they were treated as confidential and were not publicized either to the public at large or to members of the two professions. The Committee now feels, however, that it is timely to make a joint report to the two professions in order that there may be full understanding of its efforts to date.

The members of the Joint Committee feel that their meetings thus far have been most successful in creating a climate of mutual trust and understanding. They are of the opinion that the preliminary phase of discussing and understanding common problems has been completed, and they recommend that the Committee be continued for the purpose of seeking to agree upon recommendations for policy decisions and a course of action to be made by the governing bodies of the two professions.

Topics discussed at the meetings have included, (1) Shortage of physicians, (2) Methods of practice of the two professions, (3) The possibility of establishing a composite Board of Examiners, (4) Medical and osteopathic education and the accreditation of schools,

(5) Hospital relationships, and (6) Ethics and discipline.

The Committee has taken note of actions of the American Medical Association and the American Osteopathic Association, including the formation of a National AMA/AOA Liaison Committee which held its first meeting on May 1, 1960. It has also been noted that the AOA, on July 17, 1958, amended its constitution to delete references to Andrew Taylor Still; that on October 26, 1958, Still College at Des Moines, Iowa, changed its name to Des Moines College of Osteopathic Medicine and Surgery; and that on June 17, 1959, significant amendments were made to the Articles of Incorporation of the Iowa Society of Osteopathic Physicians and Surgeons. The Committee has also studied and discussed relationships between the two professions in other states, notably and particularly Kansas, Missouri and California.

Representatives of the Iowa State Medical Society have been guided by the four following principles formulated by the AMA:

A. All voluntary professional associations between doctors of medicine and those who practice a system of healing not based on scientific principles are unethical.

B. Enactment of medical practice acts requiring all who practice as physicians and surgeons to meet the same qualifications, take the same examinations and graduate from schools approved by the same agency should be encouraged by the constituent associations.

C. It shall not be considered contrary to the Principles of Medical Ethics for doctors of medicine to teach students in an osteopathic college which is in the process of being converted into an approved medical school under the supervision of the AMA Council on Medical Education and Hospitals.

D. A liaison committee shall be appointed by the Board of Trustees of the American Medical Association to meet with representatives of the American Osteopathic Association, if mutually agreeable, to consider problems of common concern including interprofessional relationships on a national level.

Representatives of the Iowa Society of Osteopathic Physicians and Surgeons have pointed out the fact that less than 20 per cent of their members (those licensed as osteopathic surgeons, as well as osteopathic physicians) are eligible for participation in the Medicare Program and other programs proposed in various bills pending in Congress. They have pointed out the fact that the Des Moines College of Osteopathic Medicine and Surgery is the only one of six osteopathic colleges that is situated in a state which does not confer unlimited practice rights on its graduates. There has been considerable discussion as to the possibility of legislation designed to give unlimited practice rights to osteopathic physicians.

Representatives of the Iowa State Medical Society have called attention to a conclusion expressed in an "In the Public Interest" article, printed in the November, 1960, ISMS JOURNAL, entitled, "Doctors of Medicine Are Willing to Help Osteopaths Solve Their Problems," as follows:

"Doctors of medicine are given unrestricted rights to practice the healing art because they meet certain standards designed to protect the public, and no one can deny that if osteopathic physicians met identical requirements, they should be accorded equal practice rights. But the excellence of a medical education goes deeper than the ability to pass an examination. Excellence of a medical education can be ascertained only through the inspection and accreditation of the school at which that education is secured. Thus, the osteopathic schools must be required to satisfy the same requirements as the medical schools before their graduates are permitted equal practice rights, and the evaluation must be made by the same agency."

The only formal conclusion reached by the Committee to date was at the meeting of November 10, 1960, when it was determined that:

"This Liaison Committee is unanimously agreed that the first step in the solution of the problem is to have both schools in Iowa examined by the same agency. Therefore, we recommend that the American Osteopathic Association and the American Medical Association be contacted to determine whether they would be willing that a joint committee, composed of members of both AOA and AMA accrediting agencies, examine both schools, if the schools so request it."

The Joint Liaison Committee unanimously recommends that it be authorized to continue its meetings, and it is hopeful that within the near future it will be in a position to make recommendations to both societies with respect to policy decisions and other actions to be adopted or rejected by their governing bodies.

Respectfully submitted,
J. M. RHODES, M.D., *Chairman*
T. E. SHEA, M.D.
W. A. SEIDLER, JR., M.D.
ROBERT N. LARIMER, M.D.
HOMER E. WICHERN, M.D.
RALPH JACK, D.O., *Chairman*
CLIVE AYERS, D.O.
JAMES LOTT, D.O.
ROGER ANDERSON, D.O.
HAROLD MYER, D.O.

COMMITTEE ON GROUP INSURANCE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The Committee on Group Insurance is pleased to report that the Accident and Dismemberment Insurance Plan for members of the Iowa State Medical Society, recommended by the Committee and approved by the Executive Council, is being implemented at the present time. This plan is being underwritten by the Bankers Life Company, of Des Moines, Iowa, and is being administered for the Society by Holmes, Prouty, Murphy & May, of Des Moines, Iowa.

The following is an outline of this plan:

BENEFITS AVAILABLE

Benefits will be paid if a person, while insured, sustains an injury effected solely through external, violent and accidental means and, as a result, suffers one of the losses described below within one year of the accident:

1. For loss of life, the principal sum.
2. For loss of one hand or one foot or the sight of one eye, one-half the principal sum.
3. For loss of two or more members (foot, hand or eye), the principal sum.

The total payment to any one person for all losses resulting from injuries due to the same accident will not exceed the principal sum.

Benefits are not provided for any loss which is caused by self-inflicted injury; disease, bodily or mental infirmity, or medical or surgical treatment thereof; insurrection, participation in a riot, police duty as a member of any military, naval or air organization, war

or act of war declared or undeclared; or engaging in or participating in aeronautical operations or activities except as a passenger.

AMOUNT OF BENEFITS AND PREMIUMS

Benefits will be offered in units of $5,000 of principal sum with a maximum of 20 units available to a member.

Principal Sum Available in Units of $5,000		*Annual Premium Payable to Age 70*	
Minimum	*Maximum*	*For $25,000*	*Per $5,000 Unit*
$25,000	$100,000	$22.50	$4.50

1. Benefits continue until the policy anniversary nearest age 70.
2. Members who have reached age 65 nearest birthday (attained age 64 years 6 months) will not be eligible to apply for benefits.
3. Benefits will be available for wives of members at the same time the member enrolls. The annual premium for the wife will be the same as for the member. The member may elect to apply for any number of units for his wife, but not to exceed the number of units elected for himself and not less than 5 units.

MEMBERS WHO ARE ELIGIBLE

Any member of the Iowa State Medical Society, practicing full time, who is under age 65, nearest birthday, on the date his insurance becomes effective.

The wife of a member who becomes insured will be eligible for the benefits unless she is eligible to participate as a Society member.

UNDERWRITING REQUIREMENTS

A simplified application form will be completed by each member, and by his wife if benefits are desired for her.

The plan will become effective for members (and wives who apply), who are practicing full time, when at least 50 per cent of the eligible members enroll within a specified enrollment period to be agreed upon between the Committee and the Bankers Life Company.

Members or wives who do not apply for the benefits during the original enrollment period may apply at a later date, subject to such underwriting requirements as are determined by the Company, by filing a written request with the Company at least six months prior to the effective date.

Members or wives who desire to change the amount of benefits may do so subject to such underwriting requirements as may be determined by the Company, and by filing a written request, with the Company, at least six months prior to the anniversary date on which the change is to be effective.

INDIVIDUAL POLICY PROVISIONS

(Only the major policy provisions are outlined here.)

Benefits for loss of life are payable to the beneficiary named by the member.

Benefits paid for other than loss of life will be made to the insured member or the policy owner if he is other than the insured member.

Proceeds may be payable to the beneficiary in a lump sum or under a settlement option available through Bankers Life Company. Settlement options may include leaving the proceeds on deposit with the Company at interest, monthly payments for a fixed period of years, or monthly payments on a life income plan.

The insured member or his beneficiary, after the insured's death, may arrange with Bankers Life Company to have the proceeds paid under any one of these options available through the Company at the time the election is made.

RATES AND DIVIDENDS

The Company reserves the right to change the rates upon the anniversary date of a policy, but no change will be made or renewal of a policy denied unless similar action is taken on all policies in this class of protection and, then, only after adequate advance notice to policy owners and the Society that such action is contemplated.

Policies will be eligible for dividends if earned on this class of protection. It is not anticipated that dividends will be available in the early years because of the type of protection provided and the very favorable rates.

INSTALLATION AND ADMINISTRATION OF THE PLAN

The plan will be installed and administered, without cost to the Society, by Holmes, Prouty, Murphy & May in cooperation with the Bankers Life Company.

Although it is not anticipated that any changes will be necessary, Bankers Life Company reserves the right to modify this proposal for effective dates after June 30, 1961.

W. O. PURDY, M.D., *Chairman*
G. E. MOUNTAIN, M.D.
E. M. SMITH, M.D.
J. W. FERGUSON, M.D.
M. L. SCHEFFEL, M.D.
A. M. HARWOOD, M.D.
A. J. GANTZ, M.D.

PODIATRY COMMITTEE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Upon recommendation of the Committee on Legislation, the Executive Council directed that a special committee be appointed to study the relationships of medical doctors and podiatrists. The President of the Society appointed the following committee: J. E. Kelsey, M.D., Chairman, C. E. Radcliffe, M.D., F. E. Thornton, M.D., C. J. Baker, M.D., and R. H. Kuhl, M.D.

Representatives of this Committee held a preliminary meeting with members of the Iowa Podiatry Society on April 4, 1961, to discuss matters of mutual concern. As a result of that meeting, the Podiatry Committee recommends that it be continued. It also recommends that at least three or four meetings be held with members of the podiatry profession during the next year, and that at least two meetings be held during each subsequent year, in order to give consideration to ethical relationships between physicians and podiatrists.

JAMES E. KELSEY, M.D., *Chairman*

Memorials and Communications

The secretary read a telegram received from Norman S. Moore, M.D., president of the Medical Society of the State of New York, which congratulated Dr. E. F. Van Epps on completing his term of office, and extended his best wishes to the president-elect, Dr. O. N. Glesne.

Dr. Oscar Alden, Red Oak, the Montgomery County Medical Society delegate, requested the privilege of the floor to invite physicians to make contributions to the L. A. Coffin Memorial Fund.

The secretary of the Society announced that Dr. Walter L. Bierring was convalescing at Iowa Methodist Hospital, and suggested that some of his old friends might like to communicate with him or, perhaps, visit him during the annual meeting.

The secretary read a letter which had been received by the Society from the Association of Cuban Physicians in Exile, at Coral Gables, dated March 17, 1961, with which had been enclosed an outline of plans for "The Free Cuban Medical College," designed to assist in the liberation of Cuba.

Resolutions

UNION COUNTY MEDICAL SOCIETY

NO. 1. PROPOSED TWENTY-FOURTH AMENDMENT

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Innumerable organizations under multitudes of names have been fighting piecemeal for maintenance of their little island of freedom, and

WHEREAS, The medical profession in a large part has been doing precisely the same thing, and

WHEREAS, It should be self-evident by this time that the medical profession cannot and will not exist as a free entity in an otherwise socialized state, and

WHEREAS, The proposed 24th Amendment to the Constitution of the United States of America will dispose of the welfare state into which we are rapidly drifting, therefore be it

Resolved, That the Union County Medical Society supports in total and asks for support from the Iowa State Medical Society for the proposed 24th Amendment which reads as follows:

"SECTION 1. The Government of the United States shall not engage in any business, professional, commercial, financial or industrial enterprise except as specified in the Constitution.

"SECTION 2. The Constitution or laws of any State, or the laws of the United States shall not be subject to the terms of any foreign or domestic agreement which would abrogate this amendment.

"SECTION 3. The activities of the United States Government which violate the intent and purposes of this amendment shall, within a period of three years from the date of ratification of this amendment, be liquidated and the properties and facilities affected shall be sold.

"SECTION 4. Three years after the ratification of this amendment the sixteenth article of amendments to the Constitution of the United States shall stand repealed and thereafter Congress shall not levy taxes on personal incomes, estates, and/or gifts." Be it further

Resolved, That copies of this Resolution be sent to all County Medical Societies of the State of Iowa and all State Medical Societies of the 50 states, and be it finally

Resolved, That our delegates be instructed to place the 24th Amendment in the exact wording as above stated before the House of Delegates of the American Medical Association and ask for and support passage.

WOODBURY COUNTY MEDICAL SOCIETY

NO. 2. MENTAL HEALTH INSTITUTES

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It is generally considered sound medical practice for the ultimate responsibility of the care of the patient to rest in the family physician; and although consultation and treatment may be obtained from both physicians in specialty practice and institutions specializing in various forms of medical care, this responsibility remains with the family physician, and

WHEREAS, For many years patients sent to the Mental Health Institutes have been cared for and returned to their home communities with no consultation reports to referring physicians, and no definite arrangements made for aftercare by the physician in the community, and

WHEREAS, The Mental Health Institutes have established satellite institutions for the continuing care of psychiatrically-ill individuals in communities, without regard to the prior existence of community facilities and without consultation with physicians in the community or with County Medical Societies as to need, desirability or local administration of such facilities, therefore be it

Resolved, That the Iowa State Medical Society continue to regard as unethical consultation and treatment, including specifically psychiatric consultation and treatment, without report to the referring physician, and be it further

Resolved, That the Mental Health Institutes be censured for establishment of continuing care facilities without consultation with community physicians and County Medical Societies and without regard to existing community facilities.

NO. 3. THIRD PARTIES

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It is a well-established ethical and legal principle that the responsibility for the care of the patient rests on the physician, and

WHEREAS, The privilege of arranging for the provision of medical care has more and more been delegated by individual persons to such Third Parties as insurance companies, commercial closed-panel groups, and welfare agencies of local, state and national governments, and

WHEREAS, Many of these Third Parties, with non-medical boards, not only attempt to advise physicians as to their medical care of the patients, but also control methods of medical care by insisting on procedures which are not medically sound, or by denying the use of procedures which are medically indicated, to the ultimate detriment of the patient's welfare, therefore be it

Resolved, That this Society reaffirm its belief that only a physician is able to judge what is sound medical care for a sick person; and that although Third Parties may act with perfect propriety as the paying agent for a patient, they are exceeding the bounds of propriety in dictating methods of patient care.

SCOTT COUNTY MEDICAL SOCIETY

NO. 4. JUDICIAL COUNCIL CANDIDATES

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Candidates for the Judicial Council are now nominated by the Nominating Committee, and

WHEREAS, Each councilor district knows best its own wishes as to its representative on the Council, and

WHEREAS, If a contest develops for the position of Councilor in any district, the contest is best resolved within that district rather than in the House of Delegates, therefore be it

Resolved, That Chapter IV of the Constitution be amended as follows:

1. To the next to the last sentence in Section 2 be added the words "except as provided in Section 3."
2. Sections 3 and 4 of this Chapter become Sections 4 and 5 respectively.
3. Section 3 as follows: "At each Councilor District caucus when the member and alternate to the Nominating Committee are chosen, so also shall the same caucus choose one candidate for the position of Councilor of that District when the current term is expiring. Any contest for this position shall be resolved in the caucus. The name of the candidate will then be the only name to be presented by the District's member to the Nominating Committee."

CERRO GORDO COUNTY MEDICAL SOCIETY

NO. 5. RELATIVE VALUE STUDY COMMITTEE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Unit Fee Index, better known as the "gray book," is being used as a reference by many doctors in the State and by Iowa Medical Service, and

WHEREAS, Since its publication in April of 1958 several inequities have been found in the index, and

WHEREAS, The Relative Value Study Committee during 1960 conducted a survey of the doctors in the State as a check on the validity of the Iowa Unit Fee Index, therefore be it

Resolved, That the Iowa State Medical Society continue the activity of the Relative Value Study Committee and request them to report yearly to the Iowa State Medical Society any changes they recommend in the Iowa Unit Fee Index.

WRIGHT COUNTY MEDICAL SOCIETY

NO. 6. TWO-YEAR TRAINING PROGRAM

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Many general practice residencies are unfilled and many have inadequate progressive and integrated training programs, and

WHEREAS, The present two-year family practice pilot program of the American Medical Association fails to adequately prepare the young physician to do general practice in his own community, and

WHEREAS, Each segment of organized medicine has determined—and still determines—the minute details and overall content of their respective training programs, therefore be it

Resolved, That the Iowa Delegates to the AMA be *instructed* to present the following: That the *Council on Medical Education and Hospitals* be directed to formulate other two-year progressive training programs which are acceptable to the American Academy of General Practice, the only national association representing general practice—programs which specifically will give the young Generalist adequate, and not merely optional, obstetrical and minor surgical training.

POLK COUNTY MEDICAL SOCIETY

NO. 7. VENDOR PAYMENT PLAN

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The House of Delegates two years ago agreed to disapprove but tolerate the existing agreement between the State Board of Social Welfare and the Iowa State Medical Society, and

WHEREAS, There are still numerous complaints from physicians regarding the autonomous and unilateral policy formation of the State Board of Social Welfare, therefore be it

Resolved, That the Liaison Committee of the Iowa State Medical Society and the State Board of Social Welfare renegotiate within the next six months the existing agreement so there may be more voice, both in policy and fee schedule, by the local county medical society and the county board of social welfare.

NO. 8. 1963 ANNUAL MEETING

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Des Moines is the most desirable city in which to hold the Annual Meeting of the Iowa State Medical Society, and

WHEREAS, Polk County physicians are happy to have the members of the Iowa State Medical Society as their guests, therefore be it

Resolved, That the Polk County Medical Society extend the invitation to the Iowa State Medical Society to hold its Annual Meeting, April 21 through April 24, 1963, in Des Moines, Iowa.

POCAHONTAS COUNTY MEDICAL SOCIETY

NO. 9. ISMS DUES

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It is evident that a resurgence of conservatism is growing throughout the nation, and

WHEREAS, There is need of a concerted effort from medicine in alliance with other groups to halt further trends toward socialism in all facets of our national life, and

WHEREAS, The implementation of such a program will require more funds than are presently available from authorized revenues, and

WHEREAS, We believe medicine should support all activities to insure the private practice of medicine and to better the public image of the medical profession, therefore be it

Resolved, That the ISMS dues be increased $20.00 per annum, and be it further

Resolved, That a copy of this resolution be sent to the AMA Board of Trustees to inform such Board of this action on the part of the medical profession in Iowa.

BOONE COUNTY MEDICAL SOCIETY

NO. 10. PUBLIC RELATIONS ON NATIONAL LEVEL

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Reference Committee on Public Relations in 1960 felt no action was necessary on the Calhoun County resolution which referred to instructing our AMA delegates to encourage a concentrated public education program because such action had been taken previously by the Society on the same subject which was approved by the Council on Legislation of the AMA and submitted to the Board of Trustees of the AMA, and

WHEREAS, To date there is little evidence that the AMA intends to implement the proposal that was presented to it by Iowa and then its own Legislative Council, and

WHEREAS, It is obvious that the medical profession is losing round by round the battle of public relations to organized labor and welfare agencies, therefore be it

Resolved, The AMA delegates be instructed by this House of Delegates to urge the AMA to put forth every effort and expend the necessary funds to obtain experts in this field and promote a program that will begin to improve public opinion of our profession.

JOHNSON COUNTY MEDICAL SOCIETY

NO. 11. OFFICE OF ISMS VICE PRESIDENT

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The office of the Vice President of the Iowa State Medical Society has in the past been an honorary office with very little executive responsibility, and

WHEREAS, The talents of men elected to this office could well be used in the ever-expanding responsibilities and activities of the Iowa State Medical Society, therefore be it

Resolved, That the office of Vice President of the Iowa State Medical Society be expanded to include specific executive, liaison, and policy making duties.

NO. 12. CANDIDATES FOR COUNCILORS

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, In the past years the House of Delegates of the Iowa State Medical Society has voted as a whole for the candidates for a councilor of each councilor district, and

WHEREAS, This involves voting for a candidate whose duties will be restricted to his own councilor district and are not the concern of the entire House of Delegates, therefore be it

Resolved, That the candidates for a councilor of each individual district be nominated and elected by the members of the Medical Societies of the respective councilor districts and not by the House of Delegates at large.

JEFFERSON COUNTY MEDICAL SOCIETY

NO. 13. POSSIBLE UNETHICAL USE OF AUTHORITY BY THE STATE PUBLIC HEALTH DEPARTMENT

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, It has come to the attention of this Medical Society through its own personal experience, and

WHEREAS, It has also been observed by the Trustees of the Jefferson County Hospital in their negotiations with the State Department of Public Health, and

WHEREAS, This Medical Society has been in frequent contact with Dr. Zimmerer of the State Department of Public Health, Mr. Pickworth, and the Federal Office in Kansas City responsible for the allocation of Federal Funds under the Hill-Burton Act in the State of Iowa, and

WHEREAS, The Jefferson County Medical Society has been in frequent personal contact with members of the Advisory Board to the State Public Health Department charged with advising said officials on disbursement of such funds on the basis of need and qualification, and

WHEREAS, We have observed that the disposition of these funds, not only to this county but to other counties in the state, does not necessarily follow the action of the Advisory Council, but appears to contain an element of personal use of executive authority, not in agreement with the Advisory Council, and often resulting in delay and refusal of necessary funds, therefore be it

Resolved, That the Iowa State Medical Society, through its House of Delegates, recommend to the executive branch of the Government of Iowa, that the State Public Health Department be formally investigated in regard to the allocation of Federal Funds for hospital construction.

CHICKASAW COUNTY MEDICAL SOCIETY

NO. 14. COUNTY HEALTH PHYSICIAN

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see report of the reference committee.)

WHEREAS, The Chickasaw County Medical Society is aware of the deteriorating relationship existing between the County Health Physician, the County Board of Supervisors, and the Agents of the State Department of Health, such as the Sanitary Engineer and agents for the various inspections, and

WHEREAS, Counties of similar population, where there are no professionally trained health officers, have noted the same by-pass which eliminates the counsel of the County Health Physician, therefore be it

Resolved, That the Iowa State Medical Society make a study or become instrumental in asking the Governor to have a qualified examination made of the office of the County Health Physician, and be it further

Resolved, That if this office should be found advisable and necessary, there should be an effort made on the part of the Iowa State Medical Society to encourage better understanding, cooperation and efficiency between the County Health Physician and the State Department of Health, or if this investigation proves that this office is not necessary in the performance of maximum health protection, the Iowa State Medical Society through legal counsel shall encourage the abolishment of this office.

JEFFERSON COUNTY MEDICAL SOCIETY

NO. 15. REDUCTION OF DRUG COSTS

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see report of the reference committee.)

WHEREAS, All doctors in the state of Iowa, as well as over the country, receive daily a great mass of third class advertising and promotional fliers from each and every drug company, and

WHEREAS, This material is frequently discarded by the secretary before it reaches the doctor's desk, and

WHEREAS, The doctor's choice of drug usage is not affected by colorful, promotional material, and

WHEREAS, They often contain samples which, if allowed to escape while in transit, would constitute a dangerous hazard to people who might pick them up and consume them, and

WHEREAS, This represents a considerable expense to the drug company, which is in turn passed on through the cost of the drug, we, the House of Delegates of the Iowa State Medical Society, do hereby

Resolve, That each and every drug company selling within the state of Iowa receive a copy of this passed resolution, with the instruction that the doctors of this state would prefer to have the funds spent on this type of useless advertising, used to reduce the cost of the drug to the patient.

R. W. LEE, M.D., DELEGATE, WEBSTER COUNTY

NO. 16. CONDEMNATION OF H. R. 4222

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see report of the reference committee.)

WHEREAS, The anesthesiologists of the State of Iowa are 100 per cent private practitioners with fee for service (except for Iowa City and the Veterans Hospitals), and

WHEREAS, The Kennedy administration has introduced into Congress a bill known as H.R. 4222 to provide hospital services to certain beneficiaries of the Old Age and Survivors Program, and

WHEREAS, This bill includes under "hospital" services the professional medical services of anesthesiologists, and

WHEREAS, This act would constitute a further intrusion of the Federal Government as a third party in the doctor-patient relationship as it pertains to these physicians, therefore be it

Resolved, That the House of Delegates of the Iowa State Medical Society express its considered disapproval of the proposed H.R. 4222 Bill and condemn those features of the bill which incorporate anesthesiologists under "hospital" services when they have labored as a group to remain individual, private practitioners of medicine.

POLK COUNTY MEDICAL SOCIETY

NO. 17. RECRUITMENT OF PHYSICIANS

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, There are hospitals in Iowa offering educational programs for interns and residents, and

WHEREAS, These hospitals are finding it difficult to recruit interns and residents, and

WHEREAS, The University of Iowa College of Medicine is the only medical school in Iowa, and

WHEREAS, Graduates of the University of Iowa College of Medicine are a logical source for interns and residents for the educational programs in Iowa hospitals, and

WHEREAS, Interns and residents tend to practice near the hospitals where they have their internship or residency, now therefore be it

Resolved, That the hospitals offering educational programs for interns and residents and the University of Iowa College of Medicine be encouraged to cooperate in upgrading the quality of the educational programs for interns and residents offered in these hospitals, and

Be It Further Resolved, That the University of Iowa College of Medicine be encouraged to develop an official liaison with those hospitals in Iowa offering educational programs for interns and residents when such liaison seems desirable and practical, and

Be It Further Resolved, That medical students at the University of Iowa College of Medicine be adequately informed of the opportunities for participating in educational programs for interns and residents and be encouraged to participate in them, and

Be It Finally Resolved, That they be adequately informed of the opportunities for medical practice in Iowa.

CALHOUN COUNTY MEDICAL SOCIETY

NO. 18 FEES FOR MEDICINES

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see report of the reference committee.)

WHEREAS, Repeated resolutions dealing with the inequity between fees paid for medicines dispensed by physicians and by pharmacists have been introduced, and

WHEREAS, The physicians' fees in these instances are limited to 10 per cent above what the cost of these medicines

would be to the druggist, while the druggist receives nearly his average retail charge and in some cases more, therefore be it

Resolved, That our liaison committee be specifically instructed to correct at once this gross inequity before it sets an unfortunate precedent on a larger level. Fees for medicines paid to physicians should be no different than those paid to pharmacists.

PAGE COUNTY MEDICAL SOCIETY

NO. 19. VENDOR PAYMENT PROGRAM

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The membership of the Iowa State Medical Society was originally given the impression that its dealings with the State Department of Social Welfare in the Vendor Payment Program would be by mutual agreement, but

WHEREAS, Said membership of the Iowa State Medical Society is currently subjected to rulings concerning their charges for the care of patients in those categories included in the Vendor Program, without the official sanction of either the House of Delegates or the Executive Council nor even consultation with these bodies, and

WHEREAS, There is likelihood that the membership of the Iowa State Medical Society will be involved in an augmented but similar program when a bill for Medical Care to the Aged is implemented,

Therefore Be It Resolved, That this House of Delegates direct the President and the Executive Council to herewith sever any and all working agreements between the Iowa State Medical Society and the Iowa State Department of Social Welfare, and

Be It Further Resolved, That this House of Delegates direct the President and the Executive Council to enter into negotiations with the State Department of Social Welfare, taking the necessary deliberate time to allow for the formulation of (1) A policy satisfactory from the standpoint of the practicing physician, which at its least shall have a term of no less than one year without changes; (2) An agreement that this aforementioned policy shall be changed only by mutual consent of the State Department of Social Welfare and one of the bodies of the Iowa State Medical Society which can act with authority; (3) An agreement resulting in a policy such as to provide for satisfactory care for any patient coming within the scope of either the Vendor Program or the Medical Care for the Aged Program when it might be implemented; (4) A policy that shall in no way besmirch or disparage the honor and dignity of the medical profession in the State of Iowa, and

Lastly, Be It Resolved, That this House of Delegates ask the membership of the Iowa State Medical Society to abide by such arrangements as might be made with the Department of Social Welfare, to the end that the interests of both may be protected.

NO. 20. BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The members of the Iowa State Medical Society have representation on the Blue Shield Board, with one of their colleagues elected from each councilor district, and

WHEREAS, The Participating Physicians are frequently surprised at unanticipated changes in the fee to which they are entitled in the care of patients covered by fairly recent Blue Shield contracts (for example, the B 300 contract),

Therefore Be It Resolved. That the representative from each councilor district to the Blue Shield Board be both allowed to and required to meet with the membership of each county medical society in his district, for the purpose of explaining and disseminating knowledge of any contemplated changes in an old contract or any proposed new contract, and

Be It Further Resolved, That he do this and be aware of the sentiments of Participating Physicians in his district before he can cast his vote on such aforementioned contracts, all this with the hope of eliminating friction between the involved physicians and Iowa Medical Service.

NO. 21. BLUE SHIELD

(Referred to the Board of Trustees sitting as a reference committee for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Be It Resolved, That the Iowa State Medical Society reimburse the physician representing each councilor district on the Blue Shield Board for those expenses incurred when he visits the county medical societies in his district for purposes of discussing and explaining changes in Blue Shield contracts which will involve Participating Physicians in his district.

BLACK HAWK COUNTY MEDICAL SOCIETY

NO. 22. SCIENCE FAIRS

(Referred to the Board of Trustees sitting as a reference committee for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, In the past the Iowa State Medical Society has contributed funds to the Science Fair in Des Moines, which is sponsored by the Drake University and the DES MOINES REGISTER, and

WHEREAS, There are other Science Fairs around the state of equal importance, sponsored by other newspapers and other colleges, and

WHEREAS, It is important that the State Society improve their image in all parts of the State,

Therefore Be It Resolved, If any funds are provided for sponsorship of Science Fairs that these funds be distributed equally among all the recognized Science Fairs in the State.

POCAHONTAS COUNTY MEDICAL SOCIETY

NO. 23. BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The medical profession in Iowa is attempting to forestall encroachment of government in medicine, and

WHEREAS, Voluntary health insurance programs, both of commercial carriers and non-profit Blue Shield, are our first bulwark against such encroachment, and

WHEREAS, Iowa Medical Service (Blue Shield) is unable to issue contracts to such groups as U. S. Government employees or out of state corporations with branches located in Iowa, such groups having indicated an interest in the only form of health insurance in which the medical profession has a voice, be it therefore

Resolved, That Iowa Medical Service be allowed to implement service contracts with such groups, and be it further

Resolved, That such contracts conform to the recommendations of the Iowa State Medical Society Policy Evaluation Committee's report, except that any deviations from previously constituted basic policies already approved by the Medical Society, particularly in reference to full service income levels, shall be referred to the House of Delegates for approval.

LIFE AND ASSOCIATE MEMBERSHIPS

LIFE MEMBERSHIPS RECOMMENDED
ON THE BASIS OF 50 YEARS' PRACTICE AND 30 YEARS' MEMBERSHIP

Cherokee	Michael F. Joynt, Marcus
Delaware	James K. Stepp, Manchester
Des Moines	Boyd L. Ditto, Burlington
Polk	Edmund G. Zimmerer, Des Moines
Scott	Walter A. Matthey, Bettendorf
Webster	Thomas J. Dorsey, Fort Dodge
Woodbury	William E. Cody, Sioux City

ASSOCIATE MEMBERSHIPS
ON THE BASIS OF RETIREMENT OR INCAPACITATION

Chickasaw	Merle J. McGrane, New Hampton
Clinton	Frank O. Kershner, Clinton
Des Moines	Nathan Campbell, Yarmouth
Polk	N. Boyd Anderson, Des Moines
	Cecil C. Jones, Des Moines
Woodbury	Ingmar U. Vansgness, Sioux City
Dubuque	Theodore Scharle, Dubuque

Nominations for the outstanding Iowa General Practitioner of the Year Award were received.

The House of Delegates was adjourned at 2:20 p.m.

WEDNESDAY SESSION, APRIL 26, 1961

The Wednesday session of the House of Delegates was called to order at 7:35 a.m. The House approved the taking of attendance by registration cards. There were 117 delegates, 8 voting alternates and 20 ex-officio members present.

County	*Delegate*	*Alternate*
Adair	A. J. Gantz	
Adams	J. C. Nolan	
Allamakee	A. F. Wiley	
Appanoose	E. A. Larsen	
Audubon		
Benton	J. E. Blumgren	
Black Hawk	C. D. Ellyson	
	T. L. Trunnell	
	R. C. Miller	
	F. G. Loomis	
	G. D. Phelps	
Boone	R. L. Wicks	
Bremer	V. H. Carstensen	
Buchanan	R. L. Knipfer	
Buena Vista	H. E. Farnsworth	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	P. T. Cawley	
Cass	E. M. Juel	
Cedar		
Cerro Gordo	J. W. Lannon	F. W. Saul
	H. W. Morgan	
Cherokee		
Chickasaw	P. C. Richmond	
Clarke	G. I. Armitage	
Clay	D. H. King	
Clayton		
Clinton	H. A. Amesbury	
	M. E. Barrent	
Crawford	A. H. Grau	
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	P. T. Meyers	
Decatur	E. E. Gamet	
Delaware	R. E. Clark	
Des Moines	F. G. Ober	
	F. H. Coulson	
Dickinson		
Dubuque	D. F. Ward	
	R. J. McNamara	
	L. P. Alt	
Emmet	H. A. Lindholm	
Fayette	R. S. Jaggard	
Floyd		E. E. Schmeidel
Franklin	R. E. Munns	
Fremont		
Greene	R. E. Jongewaard	
Grundy	E. A. Reedholm	
Hamilton	G. A. Paschal	
Hancock-Winnebago	J. T. Mangan (W)	
Hardin	J. J. Shurts	
Harrison	J. W. Barnes	
Henry		
Howard	P. F. Kepros	
Humboldt	I. T. Schultz	
Ida		
Iowa	D. F. Miller	
Jackson		
Jasper	R. F. Frech	
Jefferson	K. H. Strong	
Johnson	A. C. Wise	
	W. M. Kirkendall	
	K. R. Cross	
	C. E. Schrock	
	T. T. Bozek	M. L. Mosher
	J. M. Layton	K. J. Judiesch
Jones		
Keokuk		
Kossuth		
Lee	L. C. Pumphrey	
	G. C. McGinnis	
Linn	J. J. Keith	
	John Parke	
	J. J. Redmond	
	L. J. Halpin	C. R. Aschoff
Louisa		
Lucas		
Lyon	G. D. Bullock	
Madison	J. E. Evans	
Mahaska	F. O. W. Voigt	
Marion	D. A. Mater	
Marshall	O. D. Wolfe	
	L. O. Goodman	
Mills	M. L. Scheffel	
Mitchell		
Monona		
Monroe		
Montgomery	Oscar Alden	
Muscatine	C. P. Phillips	
O'Brien	J. C. Peterson	
Osceola		
Page	W. G. Kuehn	
Palo Alto		G. H. Keeney
Plymouth	J. P. Trotzig	
Pocahontas	J. M. Rhodes	
Polk	D. F. Crowley	
	E. T. Burke	
	R. A. Dorner (Chm.)	
	B. C. Barnes	
	D. O. Newland	
	R. B. Stickler	
	M. E. Alberts	
	J. T. Bakody	
	S. J. Zoeckler	
	J. E. Gustafson	
	P. K. Hughes	
	N. W. Irving	
Pottawattamie	A. G. West	
	F. N. Weber	
	F. E. Marsh, Jr.	
Poweshiek		
Ringgold		
Sac	J. W. Gauger	
Scott	J. H. Sunderbruch	
	P. E. Gibson	
	R. P. Lagoni	
	J. F. Bishop	
Shelby	R. E. Donlin	
Sioux	M. O. Larson	
Story	G. E. Montgomery	
	J. D. Conner	
Tama	C. W. Maplethorpe	
Taylor	R. W. Boulden	
Union	H. J. Peggs	
Van Buren		
Wapello	K. E. Lister	L. J. Gugle
Warren (Amalgamated with Polk)		
Washington	G. J. Nemmers	
Wayne	C. N. Hyatt	
Webster	H. H. Kersten	
	R. W. Lee	
Winneshiek	R. M. Dahlquist	
Woodbury	H. E. Rudersdorf	
	M. B. Blackstone	
	P. M. Cmeyla	
	Roy Conmey	
	Henry Boe	
Worth	B. H. Osten	
Wright	C. P. Hawkins	

DELEGATES AT LARGE

H. W. Mathiasen
J. W. Billingsley

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

E. F. Van Epps	C. E. Radcliffe
O. N. Glesne	G. S. Atkinson
V. W. Petersen	L. V. Larsen
R. F. Birge	L. W. Swanson
H. J. Smith	C. H. Stark
G. H. Scanlon	C. V. Edwards, Sr.
S. P. Leinbach	J. T. McMillan
J. E. Houlahan	Fred Sternagel
G. E. McFarland, Jr.	W. D. Abbott
C. W. Seibert	W. L. Downing

Minutes of the April 23 meeting of the House of Delegates were read and approved. The election of officers followed and the following physicians were chosen:

President-Elect	G. H. Scanlon, M.D., Iowa City
Vice-President	L. F. Hill, M.D., Des Moines
Trustee (3 year term)	C. W. Seibert, M.D., Waterloo
Speaker of the House	C. V. Edwards, Sr., M.D., Council Bluffs (Re-elected)
Vice Speaker of the House	L. J. Halpin, M.D., Cedar Rapids
Councilor, 1st District	C. L. Kelly, Jr., M.D., Charles City
Councilor, 4th District	M. A. Blackstone, M.D., Sioux City (Re-elected)
Councilor, 6th District	C. W. Seibert, M.D., Waterloo (Re-elected) (On request of the delegates from this district, Dr. Seibert withheld his resignation as a councilor until the district had an opportunity to caucus and recommend his successor.)
Councilor, 11th District	L. V. Larsen, M.D., Harlan (Re-elected)
AMA Delegate	D. F. Ward, M.D., Dubuque (Re-elected)
Alternate Delegate, AMA	E. M. Smith, M.D., Eagle Grove (Re-elected)

(AMA delegate and alternate delegate to assume office January 1, 1962.)

The president, Dr. E. F. Van Epps, introduced to the House of Delegates, the visiting presidents of the medical societies of the states of Wisconsin, Minnesota and Illinois.

Reference Committee Reports

The following reference committee reports were presented to and approved by the House of Delegates.

GENERAL PRACTITIONER OF THE YEAR AWARD

The Reference Committee on the General Practitioner Award considered six physicians who had been nominated by their county medical societies for the honor of being named General Practitioner of the Year by the Iowa State Medical Society. As far as the Committee knows, these were a record number of candidates for the award.

The Committee wishes to point out that the responsibility of selecting one physician from six nominated as Iowa's General Practitioner of the Year was a difficult one, since each candidate could certainly qualify for this high honor.

After much consideration and study, the Committee recommends that Doctor H. A. Housholder, of Winthrop, Buchanan County, be named as Iowa's General Practitioner of the Year for 1961. The Committee agreed that all the background material provided on each candidate was outstanding, and it is hoped that the material on other candidates will be submitted for consideration at a future Annual Meeting of the Iowa State Medical Society.

C. N. HYATT, M.D., *Chairman*
FRED STERNAGEL, M.D.
OSCAR ALDEN, M.D.
E. E. GAMET, M.D.
A. F. WILEY, M.D.

ARTICLES OF INCORPORATION AND BY-LAWS

The Reference Committee on Articles of Incorporation and By-Laws considered the Supplemental Report of the Standing Committee on Articles of Incorporation and By-Laws and, in addition, three resolutions which had been referred to it.

The Reference Committee approved the recommendation, contained in the Supplement Report of the Standing Committee, on changing the name of our organization from "Iowa State Medical Society" to "Iowa Medical Society." The recommended change is as follows:

Resolved, That Article I of the Amended and Substituted Articles of Incorporation of Iowa State Medical Society, as amended, be and it hereby is amended by eliminating the word "State" from the name of the corporation so that the first clause of Article I shall read:

"The name of this corporation shall be the 'Iowa Medical Society.'

"*Be It Further Resolved,* That the Amended and Substituted Articles of Incorporation of Iowa State Medical Society, as amended, be and they hereby are amended by deleting the word 'State' from the term 'Iowa State Medical Society' wherever the term now appears in said Articles so that henceforth the term as it appears in said Articles will be 'Iowa Medical Society.'

"*Be It Further Resolved,* That the By-Laws of Iowa State Medical Society, as amended, be and they hereby are further amended by eliminating the word 'State' from the term 'Iowa State Medical Society' so that wherever said term now appears in the By-Laws it will henceforth appear as: 'Iowa Medical Society.'"

Mr. Speaker, I move the adoption of this portion of the report.

The Reference Committee on Articles of Incorporation and By-Laws considered and endorsed the amendment to Section 10 of Chapter IX of the By-Laws of Iowa State Medical Society proposed in the Supplemental Report of the Standing Committee as a means of resolving a conflict between the wording of that section and the wording of Section 3 of Chapter III of the By-Laws. That amendment is as follows:

"*Be It Resolved,* That Section 10 of Chapter IX of the By-Laws of Iowa Medical Society, as amended, be and it hereby is amended by deleting the first sentence therefrom and by substituting in lieu thereof the following:

"Some time in advance of the annual meeting of the Society each component society which has made its annual report and paid its dues shall be entitled to elect one delegate and one alternate delegate from each County within the component society to represent it in the House of Delegates of this Society."

Mr. Speaker, I move the adoption of this portion of the report.

The Reference Committee on Articles of Incorporation and By-Laws considered the change in procedure for the election of judicial councilors that had been proposed informally in the Supplementary Report of the Standing Committee on Articles of Incorporation and By-Laws and in resolutions from the Scott and Johnson County Medical Societies. In line with suggestions contained in all three of those documents, the Reference Committee proposes the following amendment:

"*Resolved,* That the next to the last sentence in Section 2 of Chapter IV of the Amended and Substituted By-Laws of Iowa Medical Society, as amended, be and it hereby is amended by substituting a comma for the period at the end thereof and by adding the phrase 'except as provided in Section 3.'

"*Be It Further Resolved,* That Sections 3 and 4 of Chapter IV of the Amended and Substituted By-Laws of Iowa Medical Society, as amended, be and they hereby are amended by renumbering them Sections 4 and 5, respectively.

"*Be It Further Resolved,* That Chapter IV of the Amended and Substituted By-Laws of Iowa Medical Society, as amended, be and it hereby is amended by introducing the following:

"Section 3. At each Councilor District caucus when the term of office for that District's councilor is about to expire, a single candidate for councilor shall be chosen. Any contest for the position of councilor shall be resolved in that caucus, and the name of that candidate shall then be the only nomination for that office appearing on the official ticket reported by the Nominating Committee.

"*Be It Further Resolved,* That newly-numbered Section 4 of the By-Laws of the Iowa Medical Society, as amended, be and it hereby is amended by substituting a comma for the period at the end of the first sentence

thereof and by adding the following: 'except for the office of district councilor.' "

Mr. Speaker, I move the adoption of this portion of the report.

In Resolution No. 11, the Johnson County Medical Society asked that the office of vice-president of this Society be expanded to include specific executive, liaison and policy-making duties. In effect, the intent of the resolution was that the vice-presidency of the Society be given the stature that it deserves.

Article IV, Section 9 of the Articles of Incorporation is now as follows:

"The Vice President shall assist the President in the performance of his duties and shall, during his absence or upon his request, officiate for the President in any manner. The Vice President shall be a member of the Executive Council and an ex-officio member of the Board of Trustees without vote. In case of death, resignation or removal of the President, the Vice President shall succeed to the Presidency for the unexpired term."

It is the view of the Reference Committee on Articles of Incorporation and By-Laws that no new amendment is necessary to accomplish the purpose of the resolution, since the president of the Society is already empowered to delegate to the vice-president whatever ones of his functions he wishes.

Instead, the Reference Committee recommends that it be declared the policy of this House that the president of the Society make full use of the talents of the vice-president at all times, and that he assign responsibilities to him.

Mr. Speaker, I move the adoption of this section of the report.

Be It Further Resolved, That the chairman of the Board of Trustees and the secretary of Iowa Medical Society be and they hereby are authorized and directed to sign, acknowledge, record and publish the foregoing Amendments as the Sixth Amendments to the Amended and Substituted Articles of Incorporation and the Sixth Amendments to the Amended and Substituted By-Laws of the Iowa Medical Society and to do all other things required by law to execute, complete and place in lawful effect said Amendments.

Mr. Speaker, I move the adoption of this section of the report.

Mr. Speaker, I move the adoption of the report as a whole.

Respectfully submitted,
R. M. DAHLQUIST, M.D., *Chairman*
A. J. GANTZ, M.D.
G. C. MCGINNIS, M.D.
R. E. DONLIN, M.D.
P. M. CMEYLA, M.D.

MISCELLANEOUS BUSINESS

Mr. Speaker, members of the House of Delegates, the Reference Committee on Miscellaneous Business met to consider the business assigned to it. To those members of the Iowa State Medical Society who appeared before the Committee, we wish to express our thanks for their advice and suggestions.

The Committee first considered the Supplemental Report of the Subcommittee on Maternal and Child Health. Following lengthy discussion, the Committee recommends to the House of Delegates that it approve the starting of an educational program to acquaint the physicians of Iowa with the problem of phenylketonuria—this program to be implemented by the Subcommittee on Maternal and Child Health through the various facilities available to it.

Mr. Speaker, I move the adoption of this portion of the report.

The Committee then studied the resolution introduced by the Woodbury County Medical Society, with respect to Mental Health Institutes, and the Committee approves of the resolution as introduced.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 6, introduced by the Wright County Medical Society, asked that a two-year training program be established specifically to provide the young generalist adequate, and not merely optional, obstetrical and minor surgical training. The Committee was informed of the desire, not only of general practitioners but also of representatives of specialty groups, that such an adequate program be formulated by the Council on Medical Education and Hospitals of the AMA.

Mr. Speaker, I move the adoption of this portion of the report.

The Committee then studied the report of the M.D./D.O. Liaison Committee and unanimously recommends that the Joint Liaison Committee be authorized to continue its meetings, in order that the Committee will be in a position to make recommendations to both societies with respect to policy decisions and other actions to be adopted or rejected by the respective governing bodies.

Mr. Speaker, I move the adoption of this portion of the report.

A Supplemental Report of the Podiatry Committee, referred to the Reference Committee was discussed, and the Reference Committee recommends that the Podiatry Committee be continued. The Reference Committee also recommends that at least three or four meetings be held with members of the podiatry profession during the next year, and at least two meetings be held each subsequent year, in order to give consideration to the ethical relationships between physicians and podiatrists.

Mr. Speaker, I move the adoption of this portion of the report.

In regard to Resolution No. 8, an invitation to hold the 1963 Annual Meeting in Des Moines, which was introduced by the Polk County Medical Society, the Committee feels that since Des Moines is centrally located and more convenient to the majority of the members of the State Medical Society, it is the recommendation of the Committee that this invitation be accepted.

Mr. Speaker, I move the adoption of this portion of the report.

As the final order of business, the Committee considered Resolution No. 17, introduced by the Polk County Medical Society, regarding the upgrading of the quality of educational programs for interns and residents. The Committee recommends to the House of Delegates the adoption of this resolution, with special emphasis on the portion of the resolution that medical students at the University of Iowa be adequately informed of the opportunities for internships, residency training, and medical practice in Iowa.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole.

B. C. BARNES, M.D., *Chairman*
M. A. BLACKSTONE, M.D.
J. D. CONNER, M.D.
L. O. GOODMAN, M.D.
R. F. FRECH, M.D.

REPORTS OF OFFICERS

I. Your Committee, after carefully reviewing the Annual Report of the officers, wants to commend them for a superb job done during difficult times. Specific items in the Annual Report were thought of enough importance to be mentioned separately for the matter of emphasis: (1) Legislative activities: The State Society has enjoyed unusual success in its legislative activities during the current session of the Iowa Legislature and your Reference Committee feels the Legislative Committee, legal counsel, and Medical Society staff should be commended for their superb activity. The Committee wishes to point out that if equal vigor and ability were exercised by organized medicine on the national level, our over-all position would be greatly improved. (2) Public Relations: Public relations activity on the state level has been very successful, and particularly it should be pointed out that certain county societies have done a very effective job through the media of television and radio programs. The formation of Future Doctors' Clubs in some of the state's high schools was felt to be an admirable step in public relations and is commended to all of the component county societies as a worthwhile activity. It was universally felt that increased effort in public relations, particularly on the county level, should be encouraged and that our whole profession should be alerted to the need in this area. The Committee feels that the public relations aspects of the Hawkeye Science Fair deserve special mention. This statewide science fair has produced more favorable publicity than any recent activity. In addition to extensive coverage in the press, the fair was attended by some 8,000 people when recently held. Your Committee urges the officers of the Society to continue their efforts in this area and commends them for the fine job they have done. (3) Services to the Medical Profession: The ISMS performs far more services to the component members than do most comparable societies. The Committee wishes to commend the staff of the Society for the method in which they handle these services. (4) Scientific Education: After considerable discussion it was felt that interest and quality in the scientific program at the Annual State Meeting had deteriorated considerably under the present format, and we urge the Program Committee carefully to explore alterations of the format in an effort to correct this deficiency. (5) Preceptor Program: There was a feeling that the current Preceptor Program was in some degree failing to accomplish the purpose for which it was originally intended, and it is recommended that the Preceptor Committee re-evaluate the program along the lines discussed in their report.

Mr. Speaker, I move the adoption of this portion of the report.

II. Resolution and Supplemental Report of the Board of Trustees: Resolution No. 9, Pocahontas County, was considered and the Reference Committee approved of the intent and aims of this Resolution. We concur that continued effort by organized medicine to preserve the free enterprise practice of medicine will require a greater expenditure of funds. After discussion of the need by the officers of the Society, your Committee elected to approve the recommendations contained in the Supplemental Report of the Board of Trustees, raising the dues $10 per annum, rather than $20 as recommended in the Resolution. It is further recommended that a résumé of the budget be disseminated to the membership of the Society relative to the usage of these funds in order that there may be more general understanding of the need. Review of the dues of societies with equal activity and membership from other states indicate that comparable dues are charged.

The recommendation of the Board of Trustees relative to the purchase of accidental death and dismemberment insurance for employees, officers, committee members, and delegates of the Society while on Society business, is recommended to the House of Delegates for approval at the $50,000 level. The Board of Trustees was urged to seek bids from one other insurance company prior to the signing of a contract.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of the report as a whole.

Respectfully submitted,
P. K. HUGHES, M.D., *Chairman*
L. C. PUMPHREY, M.D.
J. E. BLUMGREN, M.D.
H. E. RUDERSDORF, M.D.
R. J. MCNAMARA, M.D.

BOARD OF TRUSTEES

The Board of Trustees, in session as a Reference Committee, considered two resolutions that had been referred to it: (1) Page County, Resolution No. 21; (2) Black Hawk County, Resolution No. 22.

Resolution No. 21 recommends "that the Iowa State Medical Society reimburse the physician representing each councilor district on the Blue Shield Board for those expenses incurred when he visits the county medical societies in his district for purposes of discussing and explaining changes in Blue Shield contracts which will involve Participating Physicians in his district."

It is the opinion of the Board of Trustees this resolution should be rejected because (1) these expenses, that might be incurred, would logically be the responsibility of Blue Shield, and (2) Blue Shield has always been willing to assume them.

Mr. Speaker, I move the adoption of this portion of the report.

The Board of Trustees agrees with the intent of the Black Hawk County Resolution, which states that "if any funds are provided for sponsorship of science fairs, that these funds be distributed equally among all the recognized science fairs in the state," but does not believe, for reasons that will be outlined herein, that it can recommend its adoption.

At the Reference Committee meeting, representatives of the Black Hawk County Medical Society were in attendance, and they spoke in reference to their resolution. They pointed out that it was not their thought that the State Medical Society should provide finances on an equal basis to all the recognized science fairs, but rather the Society should take advantage of the opportunity to get its name associated

with as many as possible. The Board wishes to provide the following historical information on development of the Hawkeye Science Fair, in order to set forth the reasons for the position it has taken on this resolution.

In 1957, the Public Relations Committee recommended that the State Society undertake the development of various projects that would be in the public interest, and provide little or no indication of selfish motivation in terms of Medical Society participation or financing. It was determined that a Statewide Science Fair would meet the aforementioned criteria, and at the same time, serve to enhance student interest in the medical sciences. Therefore, the Society staff was directed by the Board of Trustees, based on the recommendation of the Public Relations Committee, to make necessary explorations to determine whether or not other organizations might be interested in joining with the Medical Society in co-sponsoring a State Science Fair.

For obvious reasons of public relations and following the pattern of other states, contact was made with Drake University, Des Moines, and the Des Moines REGISTER AND TRIBUNE, to ascertain their interest. Immediate and enthusiastic acceptance was obtained. A tripartite committee, composed of two officials of each of the sponsoring organizations, was then created, the representatives of the Medical Society being physicians.

The committee agreed this project should not be undertaken unless it would encompass the entire state of Iowa. The general organization of science fairs is on a regional basis, and the committee was aware of this at the time it made its request to the National Science Fair for statewide participation. The National Science Fair accepted the application of the Hawkeye Science Fair as a state fair, with the understanding that the two top award winners of regional science fairs that exist or might develop in the future in Iowa would not be eligible for either of the two top prizes in the state fair, or vice-versa.

At this point, it should be mentioned that the science fair sponsored by Iowa State Teachers College, which is a regional fair, was first in the state. In an effort to avoid misunderstanding between officials of the Teachers College Fair and the Hawkeye Science Fair, representatives of the two groups met and agreed that literature promoting the Hawkeye Science Fair would not be sent to schools included in the nine county area designated for the Teachers College Fair. This agreement has been adhered to as far as each of the three Hawkeye Science Fairs is concerned. More recently, a Science Fair has been developed in Cedar Rapids. In terms of participating counties, its territory is similar to that of the Teachers College Fair. There may be others in the process of development, and we know there is at least one county science fair, but essentially, this information describes the existence of science fairs in the state of Iowa at this time.

The attitude of the Medical Society concerning the Hawkeye Science Fair can be summarized as follows: (1) It meets the requirement of being state in scope, and any eligible student in Iowa may participate; (2) It provides maximum opportunity for county medical societies to promote the establishment of other science fairs and to receive proper credit for their work; (3) As a principal sponsor of a state fair, and especially because of the affiliation with Iowa's largest daily newspaper, the Medical Society and medical profession receive the greatest return in terms of over-all public relations.

It is the opinion of the officers of the Society and the Public Relations Committee that sponsorship of the Hawkeye Science Fair has been one of the most productive public relations ventures in which the Society has been engaged. This detailed information has been provided to acquaint the members of the House with the Hawkeye Science Fair, and to explain why the Society elected to become one of its sponsors.

We are hopeful that many county medical societies over the state will follow the pattern established by the Black Hawk County Medical Society in promoting this most worthwhile project. In recommending that the House not adopt the Black Hawk County Resolution, we suggest instead that the Society take under advisement the desirability of providing gifts, perhaps in the form of student scholarships, to the recognized regional science fairs in the state.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of the report as a whole.

Respectfully submitted,
G. H. SCANLON, M.D., *Chairman*
S. P. LEINBACH, M.D.
O. D. WOLFE, M.D.
E. F. VAN EPPS, M.D.
O. N. GLESNE, M.D.
V. W. PETERSEN, M.D.
R. F. BIRGE, M.D.
H. J. SMITH, M.D.

LEGISLATION AND PUBLIC RELATIONS

Your Reference Committee on Legislation and Public Relations held open hearings on Sunday, April 23, 1961, for three hours. Following this, further deliberations took place, the Committee calling in various members of the Society from time to time and obtaining the advice of legal counsel. Nine resolutions and one supplemental report were referred to the Committee. Pertinent HANDBOOK reports were also studied.

Three resolutions concerning the Vendor Payment Program were considered. At the hearings it was again observed that there are still objections to the program, both to the principle involved and the manner of administration. However, your Committee notes that these objections are fewer in number this year and seem to come from fewer counties. This is due in part to the valiant work of the Subcommittee on Medical Services to the Indigent and the Iowa State Medical Society Negotiating Team chaired by our president, who have endeavored to carry out the directives of the 1960 House of Delegates. Also, it is apparent that many doctors understand the workings of the program better and are able to air their grievances at the local level. Failure of communication and inability to discuss misunderstandings with the responsible authorities still present problems. Your Committee recommends that the specific channels of appeal of grievances be redefined and this information sent to all members of the Society.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 7, Polk County, and Resolution No. 19, Page County, were considered together. Both rec-

commended renegotiating agreements with the State Department of Social Welfare. It should be recalled that there has never been a signed contract between the Iowa State Medical Society and the State Department of Social Welfare, the Iowa State Medical Society acting only in an advisory capacity. The Committee considered both resolutions to be well-intended and to enunciate the feelings of the majority of the members of the Iowa State Medical Society and, therefore, recommends their adoption in principle but not in context, with the proper committees continuing to work as directed by this House of Delegates to improve the Vendor Payment Program.

Mr. Speaker, I move the adoption of this portion of the report.

The Calhoun County Resolution No. 18 pertains to charges for drugs by dispensing physicians under the Vendor Payment Program. It should be pointed out that one of the achievements of the Subcommittee on Medical Services to the Indigent has been to gain an increase in the allowance for drugs from 10 to 20 per cent above cost. It was apparent that many doctors do not know of this increase. It is the feeling of the Committee that this recent increase in allowable charges for drugs may alleviate some of the problems. The Resolution urges that inequities in the payment for drugs be corrected. Since the Subcommittee has made progress and will be directed to continue its efforts in this area, it is not considered necessary to approve this resolution.

Mr. Speaker, I move the adoption of this portion of the report.

The Report of the 1960 Reference Committee on Legislation and Public Relations, adopted by the House of Delegates, sets a deadline of one year to improve the Vendor Payment Program by the following means:

A. Enlarge the Subcommittee on Medical Services to the Indigent by adding three members known to have opinions divergent to the present plan of operation.

B. Stimulate the efforts and enlarge the influence of the County Medical and Remedial Care Committees (Auditing Committees), thus increasing local control.

C. Insist on greater communication and consultation between the State Department of Social Welfare and the Iowa State Medical Society and insist that no changes, no matter how small, be made without prior consultation with the Iowa State Medical Society.

D. Insist that the State Department of Social Welfare policies be thoroughly understood, agreed to, and followed by county welfare directors and field workers.

E. Continue exploration of additional methods involving local county option.

After studying the Report of the Subcommittee on Medical Services to the Indigent, your Committee feels that many of these directives have been fulfilled, and those still pending should be further implemented and continued for another year.

Mr. Speaker, I recommend the adoption of this portion of the report.

In regard to Resolution No. 10 from Boone County concerning public relations on the national level, your Committee recommends adoption of this Resolution. It should be noted that the Executive Council approved the following on February 8, 1961:

"That the President of the ISMS, and an AMA delegate, request an audience with the Board of Trustees of the AMA to reaffirm the resolution passed by the ISMS Board of Trustees on February 3 (that the AMA Board of Trustees consider the implementation as soon as practical and using whatever means necessary, of a program which would present to the American public an image of American medicine and the medical profession that will maintain the support and confidence of the public for the private system of medical care), and to inquire what actions, if any, have been taken in reference to the resolution and, if not, why? Further, to point out that private professional counsel in the field of Public Relations could be helpful to the AMA Public Relations Department in developing and implementing an all-out, nationwide, educational campaign to gain the support and confidence of the public for the private system of medical care."

Your Committee finds that no action has yet been taken on this Executive Council proposal. Your Committee strongly recommends that immediate steps be taken to carry out this proposal.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 13 from Jefferson County on possible unethical use of authority by the State Department of Health was considered. The Committee recommends that this Resolution be referred to the Public Health Committee, and that a liaison committee from the Hospital and Professional Relation Committee and Public Health Committee meet with authorized representatives of the State Department of Health to review the rules and regulations concerning the disbursement of Hill-Burton funds in Iowa, the findings to be reported to the Executive Council within three months, or at the first meeting of the Executive Council thereafter.

Mr. Speaker, I move the adoption of this portion of the report.

The Committee considered the Resolution from Chickasaw County (No. 14) regarding the status of the county health physician. Since the establishment and qualifications of the position of county health physician are provided by law in the Iowa Code, it is recommended that this Resolution be referred to the Public Health Committee for further study. It is further recommended that if the Public Health Committee recommends changes in the Iowa Code, the matter be referred to the Legislative Committee and a full report be made to the House of Delegates at the next regular session.

Mr. Speaker, I move the adoption of this portion of the report.

The Supplemental Report of the Committee on Legislation was studied. Your Committee wishes to commend the chairman and the members of that Committee for the results obtained through their arduous work. The report recommends that a committee be appointed to consider all aspects involving the fields of radiation and radiation hazards. Your Committee recommends adoption of this report.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 16 from a delegate of Webster County was thoroughly discussed. It is the recommendation of your Committee that the House of Delegates of the Iowa State Medical Society express its considered disapproval of H.R. 4222. It is further recommended that notices of this action be forwarded to all the

members of the Iowa Congressional delegation in Washington. The portion of Resolution No. 16 pertaining to anesthesiology being included under "hospital services" is deleted, not because of disapproval of the important issues involved, but because the Committee feels nothing should detract from the overall condemnation of the bill because of its Social Security financing.

Mr. Speaker, I move the adoption of this portion of the report.

The Committee considered the Resolution from Jefferson County (No. 15) concerning the reduction of drug costs through curtailing of mail advertising by drug companies. Although the Committee was unanimously in sympathy with the intent of the Resolution, the majority felt that adoption of such a resolution as the policy of the Iowa State Medical Society would be indiscreet and would constitute interference with the marketing methods of such companies. Therefore, the majority of the Committee does not recommend adoption of this Resolution.

Mr. Speaker, I move the adoption of this portion of the report.

Resolution No. 1 from Union County regarding the proposed Twenty-Fourth Amendment to the Federal Constitution was considered. It is the opinion of the Reference Committee that the members of the Iowa State Medical Society do not have complete knowledge of the proposed Twenty-Fourth Amendment and that insufficient time has been allotted for full study of this proposed Amendment. The committee, therefore, recommends:

1. That Union County inform the Medical Society members in such manner as to make them conversant with the proposed amendment.
2. That this Resolution be referred to the Legislative Committee for further study.
3. That after adequate information and study, the Resolution be considered for resubmittal to the House of Delegates.

Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move adoption of the report as a whole.

Respectfully submitted,
J. M. RHODES, M.D., *Chairman*
F. N. WEBER, M.D.
K. H. STRONG, M.D.
J. T. HECKER, M.D.
M. E. BARRENT, M.D.

INSURANCE AND MEDICAL SERVICE

Your Reference Committee on Insurance and Medical Service was given the responsibility of considering the following items referred to it by the House of Delegates.

1. Resolution No. 3, introduced by Woodbury County Medical Society. Subject: Third Parties.
2. Resolution No. 5, introduced by Cerro Gordo County Medical Society. Subject: Relative Value Study Committee.
3. Resolution No. 20, introduced by Page County Medical Society. Subject: Dissemination of information concerning contemplated changes in Blue Shield contracts.
4. Resolution No. 23, introduced by Pocahontas County Medical Society. Subject: Blue Shield contracts for U. S. Government employees or out-of-state corporations with branches located in Iowa.
5. Final report to the House of Delegates of the ISMS Policy Evaluation Committee.
6. Supplemental report of the Policy Evaluation Committee.
7. Supplemental report of the Relative Value Study Committee.
8. Supplemental report of the Committee on Group Insurance.
9. Report of the Executive Council Subcommittee. Subject: Delegates-at-Large on the ISMS Executive Council.
10. Report of the Blue Shield Utilization and Fee Committee as published in the HANDBOOK.

Your Reference Committee met in open session on Sunday afternoon to hear opinions on these several items from Society members.

1. Since there was no debate on Resolution No. 3, your Committee recommends adoption of the resolution with the wording changed as follows: *Resolved,* That this Society reaffirm its belief that only a physician is able to judge what is sound medical care for a sick person; and that although third parties may act with perfect propriety as the paying agent for a patient, they exceed the bounds of propriety when they dictate methods of patient care.

Mr. Speaker, I move adoption of this resolution as amended.

Mr. Speaker, I move adoption of this portion of the report.

2. Resolution No. 5. Subject: Relative Value Study Committee. *Resolved,* That the ISMS continue the activity of the Relative Value Study Committee and request it to report yearly to the ISMS any changes that it recommends in the Iowa Unit Fee Index.

Your Committee recommends adoption of this resolution.

Mr. Speaker, I move adoption of this portion of the report.

3. Resolution No. 20. Subject: Dissemination of information concerning contemplated changes in Blue Shield contracts. Your Reference Committee agrees with the principle of the resolution; however, we feel that to require the Blue Shield district representative to meet with the membership of each county medical society in his district may impose an undesirable burden. We do not favor requiring a meeting with the membership of each county in his district regarding every contemplated change—unless he deems it necessary or the county medical society requests such a meeting. Each county society has or should have a Blue Shield liaison physician. Perhaps these county society liaison physicians can be used to better advantage. Therefore, your Reference Committee recommends that the representative from each councilor district to the Blue Shield Board utilize all existing means of communication, including the services of the Blue Shield Physicians Relations representatives, to assure adequate dissemination of information and that he in turn become fully aware of the sentiments of participating physicians in his district.

Mr. Speaker, I move the adoption of this portion of the report.

4. Resolution No. 23. Subject: Blue Shield contracts for U. S. Government employees or out-of-state corporations with branches located in Iowa. This resolu-

tion deals with subject matter which is also dealt with in the report of the Policy Evaluation Committee and, therefore, this item was considered simultaneously with the final report to the House of Delegates of the ISMS Policy Evaluation Committee.

5. Final report to the House of Delegates of the ISMS Policy Evaluation Committee. Opinions expressed during the discussion before this Reference Committee were not in disagreement with the philosophy of providing full-service coverage for low-income segments of our population. Full-service coverage for low-income groups was not available from private insurance companies when Iowa Medical Service was created by the ISMS, and it was for this purpose that the ISMS originally entered the field. It appeared that the physicians of Iowa still agree that this function of Iowa Medical Service is necessary and desirable. It would seem further that there is no great objection to maintaining the "service-income level" to provide full coverage for the lower income group, realizing that inflation may necessitate raising the dollar figure from time to time. When Iowa Medical Service departs from this philosophic base upon which it was founded, we begin to hear dissident voices; and it seems possible that if Iowa Medical Service attempts to compete with the private insurance industry by marketing physicians' services to higher income groups, it may defeat its own purpose, *first*, by losing support of an increasing number of physicians; and, *secondly*, by alienating the private insurance industry, whose support and friendship we have been asking in resisting the trend toward the "welfare state."

Your Reference Committee realizes that the time it has had available to study this problem is limited as compared to that devoted to the subject by the Policy Evaluation Committee, and we feel the ISMS owes much gratitude to the membership of the Policy Evaluation Committee for the dedicated efforts and the long hours devoted to the work on this project.

Opinions expressed before this Reference Committee at the open hearings indicated that there is considerable concern among physicians regarding deviation from the founding basis of Iowa Medical Service of prepayment plans of insurance for low-income groups. It seems that extension of activities in the health insurance field is potentially hazardous and should be done only with the full understanding and approval of the House of Delegates.

The final report to the House of Delegates of the ISMS Policy Evaluation Committee was studied in detail. The three plans which the Policy Evaluation Committee considered are:

"1. Accept the present Blue Shield programs, and continue to improve its offerings as well as to strengthen ISMS-Blue Shield relations.

"2. Separate Iowa Medical Service from the ISMS.

"3. Convert Blue Shield from a full service-indemnity company to strictly an indemnity company."

In regard to Plan 1, the Policy Evaluation Committee made seven recommendations as follows:

"1. Continue to adjust Blue Shield contracts to satisfy inequities." Your Reference Committee recommends adoption of this portion of the report.

Mr. Speaker, I move adoption of this portion of the report.

"2. Increase application of deductible and co-insurance features as methods of broadening coverage and lowering prepayment rates." Your Reference Committee recommends adoption of this recommendation.

Mr. Speaker, I move adoption of this portion of the report.

"3. Expand coverage for outpatient diagnostic services (this has already been initiated on a trial basis)." Your Reference Committee recommends a deletion of the word "outpatient" so that the recommendation will read, "Expand coverage for diagnostic services."

Mr. Speaker, I move the adoption of this portion of the report.

"4. Establish major-illness or catastrophic plans."

Mr. Speaker, I recommend adoption of this recommendation.

Mr. Speaker, I move adoption of this portion of the report.

"5. Design contracts with service income levels to permit Blue Shield participation in the federal employee plan—i.e., high level $6,000; low level, $4,000." It is your Reference Committee's feeling that income levels for full-service coverage should be uniform and that the upper limits be determined by the House of Delegates. This Reference Committee does not favor making an exception for one group within a certain income bracket.

Your Reference Committee recommends the following substitution: Design contracts with service income levels to $6,000.

It is pointed out that, in 1959, median income for Iowa families was $6,200 and that 42 states have full-service plans of $6,000 or higher.

Mr. Speaker, I move adoption of this portion of the report.

"6. Permit Blue Shield to develop special contracts which will enable it to participate in national accounts such as Northwestern Bell Telephone, Ford Motor Co., etc., with the understanding that if these special contracts for national accounts constitute departures from basic policies already approved by the Medical Society, particularly in reference to full-service income levels, they will be referred to the Executive Council or to the House of Delegates for approval." Your Reference Committee recommends deletion of the words "to the Executive Council or." Your Reference Committee recommends adoption of this recommendation as amended.

Mr. Speaker, I move adoption of this portion of the report.

"7. Consider development of a higher income level service contract which would provide appropriate and equitable fees when applied to the Iowa Unit Fee Index (gray book), to supplant the present Blue Chip contract. The Committee understands that experience with the Blue Shield Blue Chip program has shown such a plan to be extremely difficult to administer. That is the basis for this one of the Committee's recommendations." Your Reference Committee recommends adoption of this recommendation.

Mr. Speaker, I move adoption of this portion of the report.

Mr. Speaker, I move the adoption of the final report of the Policy Evaluation Committee as amended above.

Your Reference Committee wishes to take note of Doctor Lowry's statement as appended to the final report of the Policy Evaluation Committee and commend Doctor Lowry and his associates for the information submitted and the progress that has been made in obviously difficult areas.

The subject matter dealt with in the Pocahontas

County Resolution No. 23 has been dealt with and, therefore, your Reference Committee recommends no separate action.

Mr. Speaker, I move the adoption of this portion of the report.

6. Supplemental report of the Policy Evaluation Committee. This report carries no recommendation requiring action and we recommend acceptance of the report.

Mr. Speaker, I move the adoption of this portion of the report.

It is the feeling of your Reference Committee that the ISMS Policy Evaluation Committee should continue in being, to study problems as they arise and to advise and make recommendations to the Society regarding their disposition.

Mr. Speaker, I move adoption of this portion of the report.

7. Supplemental report of the Relative Value Study Committee. This report requires no course of action and is informational only. We recognize the monumental problem faced by the Committee and we wish to commend them for their contribution in time and effort.

Mr. Speaker, I move adoption of this supplemental report of the Relative Value Study Committee.

8. Supplemental report of the Committee on Group Insurance. The contents of this report have already been approved by the Executive Council and are being implemented at the present time.

Mr. Speaker, I move adoption of the supplemental report of the Committee on Group Insurance.

9. Report of the Executive Council Subcommittee. To refresh your memory, I read from the report as follows:

"The following is quoted from the Report of the Reference Committee on Articles of Incorporation and By-Laws as approved by the House of Delegates, April 27, 1960:

'Resolution No. 19, introduced by the Dubuque County Medical Society proposed that the two Delegates-at-Large who represent Blue Shield on the ISMS Executive Council should be non-voting members of that board, since they are neither nominated nor chosen by all members of the Society or by those residing in a particular district. At the hearings it was called to the attention of the Reference Committee that the procedure for nominating these Members-at-Large and their status as voting members of the Executive Council was set forth explicitly in a "Memorandum of Understanding," dated September 12, 1956, between the Iowa State Medical Society and Iowa Medical Service. Thus, a change in the status of such members would abrogate an agreement with Blue Shield.

'For this reason, the Reference Committee on Articles of Incorporation and By-Laws recommends the rejection of the Dubuque County Resolution, and recommends instead that the Executive Council be directed to renegotiate the agreement with Blue Shield on this matter so that in the future these delegates will serve in ex officio capacity without vote, and the House of Delegates will have an opportunity to approve the selection of Delegates-at-Large.' "

The recommendations of the Executive Council Subcommittee were:

"1. Those physicians who participated in negotiating the ISMS-Blue Shield 'Memorandum of Understanding' acted in good faith in an atmosphere of fairness and in the best interest of the parties involved.

"2. The agreement they consummated has provided a sound basis for the establishment of excellent ISMS-Blue Shield relations. It has afforded an opportunity for organized medicine in Iowa to have a choice in selecting the candidates to be considered for election to the Blue Shield Board of Directors.

"3. This inter-organizational liaison has contributed to the strengthening of Blue Shield and, within the limits of financial resources and sound prepayment practices, improvement in its coverage.

"4. There is no evidence to indicate that either party to this understanding has taken undue advantage of its provisions."

In regard to No. 5 reading as follows: "Because of these factors, and in the interest of maintaining and improving ISMS-Blue Shield relations, the committee believes it would be imprudent to attempt to alter the mechanism for the exchange of representatives between these cooperating bodies," your Reference Committee recommends deletion of Recommendation No. 5 and recommends in lieu thereof that the Committee on Articles of Incorporation and By-Laws be instructed to develop such amendments as will permit the House of Delegates, instead of the Executive Council, to elect Delegates-at-Large to represent the Blue Shield Board in the House of Delegates and on the Executive Council.

Mr. Speaker, I move adoption of the report of the Executive Council Subcommittee as modified.

10. Report of the Blue Shield Utilization and Fee Committee.

Mr. Speaker, I move adoption of this report as published in the HANDBOOK.

Mr. Speaker, I move adoption of this report as a whole.

Your Reference Committee chairman wishes especially to commend his fellow Reference Committee members for their diligence, patience, and capable assistance.

Respectfully submitted,
V. W. PETERSEN, M.D., *Chairman*
R. E. JONGEWAARD, M.D.
M. O. LARSON, M.D.
G. E. MONTGOMERY, M.D.
J. W. GAUGER, M.D.

Dr. F. J. L. Blasingame, executive vice-president of the AMA, addressed the House of Delegates. The title of his paper was "Business Unusual."

The Speaker of the House of Delegates acknowledged the work of the reference committee members and expressed appreciation to them for accepting his invitation to serve. He complimented the staff of the ISMS for its assistance in the conduct of the business of the House of Delegates, but especially with that of the reference committees.

On motion of the secretary, the House of Delegates authorized the Board of Trustees to prepare a suitable testimonial statement, on behalf of the House of Delegates and officers of the Society, to be presented to Dr. E. F. Van Epps in recognition for his outstanding service as president of the Society.

The Speaker expressed appreciation to the members of the Blue Shield Physicians Relations Department for their service as sergeants-at-arms.

The House of Delegates was adjourned by the Speaker at 2 p.m.

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* Re-elected at the 1961 Annual Meeting.

Cecil W. Seibert, Waterloo, was re-elected Councilor, 6th District, resigned, and John W. Ferguson, Newton, was appointed by the Board of Trustees to serve until the 1962 Annual Meeting.

Effective January 1, 1962, Elmer M. Smith, Eagle Grove, will be the single Alternate Delegate to the AMA, and will become a non-voting member of the Executive Council.

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of the

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1961

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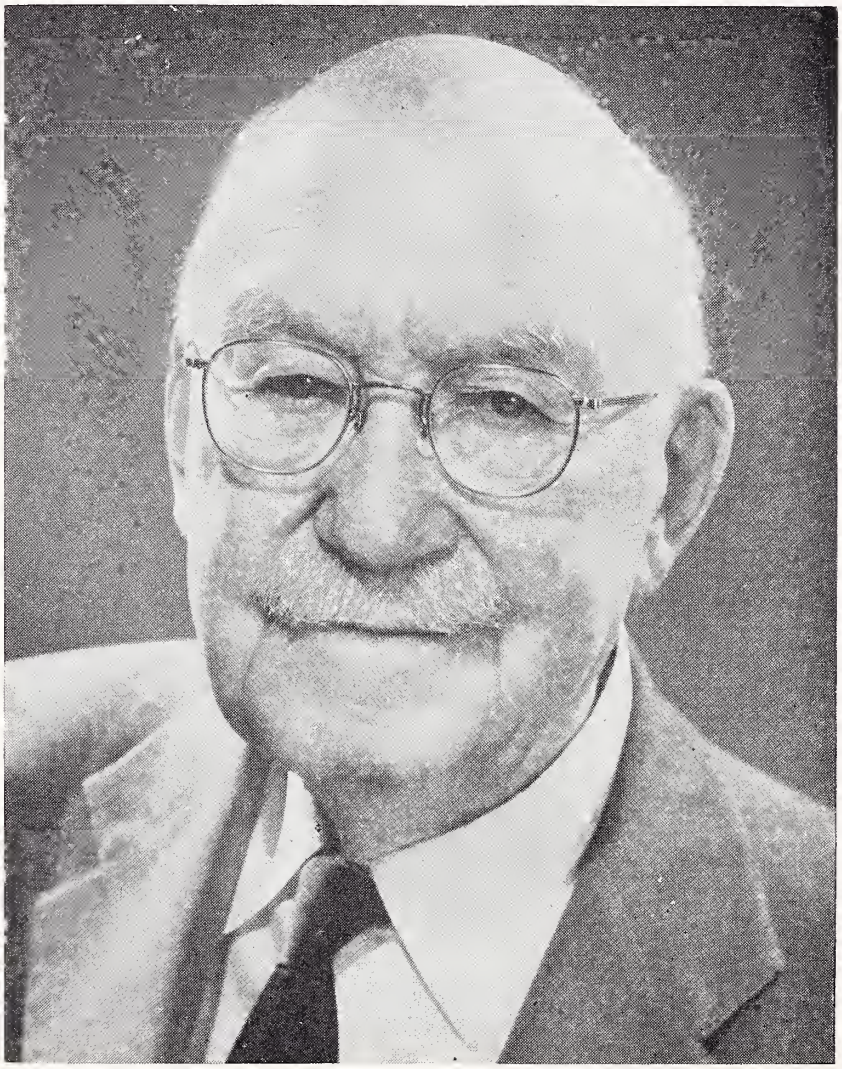
as of

June 15, 1961



WALTER LAWRENCE BIERRING, M.D.
July 15, 1868—June 24, 1961

Aagesen, Carl A., Dows
Abbott, Albert R., Ames
Abbott, Walter D., Des Moines
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Adams, Lyle E., Fort Madison
Adams, Vincent J., Rockwell
Addison, Cornelius P., Waterloo
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Ahrens, John H., Oelwein
Ahrens, Lewis H., Fontanelle (A.M.)
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Alberti, Robert L., Oskaloosa
Alberts, Marion E., Des Moines
Alcorn, Harry W., Mason City
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Aleu, Fernando P., Iowa City
Alftine, David C., Iowa City
Allen, Hoyt H., Fort Dodge
Allen, Marion B., Fort Dodge
Allen, Richard L., Bloomfield
Allen, Robert B., Burlington
Allender, Robert B., Des Moines
Allison, Monroe P., Northwood
Alt, Louis P., Dubuque
Altman, Samuel J., Davenport
Ambery, Sebastian, Keokuk
Amesbury, Harry A., Clinton
Amick, Perry P., Des Moines
Amlie, Paul J., Blairstown
Andersen, Bruce V., Greene
Andersen, Holger M., Strawberry Point
Andersen, Kenneth N., Center Point
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Anderson, Evlyn Mae, Des Moines
Anderson, George S., Iowa City
Anderson, Glenn J., Winterset
Anderson, Harold N., Des Moines
Anderson, Ingeborg, Des Moines
Anderson, J. Donald, Des Moines
Anderson, N. Boyd, Springdale, Ark. (A.M.)
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Anderson, Robert W., Des Moines
Anderson, Walter D., Des Moines
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Andre, Gaylord R., Lisbon (A.M.)
Andrew, Earl V., Iowa City
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Anneberg, Paul D., Carroll
Anneberg, Walter A., Carroll
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Anspach, Royal G., Colfax
Anspach, Royal S., Mitchellville
Arent, Asa S., Humboldt
Armitage, George I., Osceola
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Arnold, Keith E., Sioux City
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Ashler, Frederic M., Hamburg
Ashline, George H., Keokuk
Asthalter, Robert W., Muscatine
Atkinson, George S., Oskaloosa
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Augspurger, Roger L., Sigourney
Austin, Arthur T., Ottumwa
Ayers, Emmet V., Charles City
Ayers, LeRoy J., Sioux City

Bachhuber, Hugo M., Cherokee
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Bailey, Jesse L., Des Moines
Bailey, John L., Anamosa
Bailey, Robert O., Waterloo
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Bairnson, George A., Cedar Falls
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Baker, John N., Cedar Falls
Bakody, John T., Des Moines
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Baltzell, Winston C., Charles City
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Barr, Guy E., Sioux City (L.M.)
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Bartlett, George E., New Sharon (L.M.)
Bartley, Richard L., Audubon
Barton, Helen Brockman, Independence
Barton, Robert L., Dubuque
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Basinger, Byron L., Goldfield
Basler, William R., Cedar Rapids
Bastron, Harold C., Red Oak
Bates, Maurice T., Des Moines
Baughman, Donald R., Dubuque
Baumann, James G., Charles City
Bausch, Richard G., Cedar Rapids
*Bay, Frank N., Albia
Beal, Arline M., Davenport
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Bean, William B., Iowa City
Beardsley, Ralph W., Des Moines
Beasley, Oscar C., Iowa City
Beattie, John L., Creston
Beatty, Howard G., Creston
Beaumont, Fred H., Council Bluffs
Beckman, Charles W., Kalona
Beckman, Peter W., Perry (L.M.)
Bedell, George N., Iowa City
Beeh, Edward F., Fort Dodge
Bees, Louis E., Bennett
Begley, Bernard J., Iowa City
Behrens, Geo. W., Davenport (L.M.)
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Bell, Robert S., Burlington
Benda, Thomas J., Dubuque
Bender, Henry A., Waterloo
Bendixen, Frederick C., Le Mars
Benedict, James S., Des Moines
Benfer, Merrill M., Davenport
Benge, Donald K., Hampton
Bennett, Geoffrey W., Oskaloosa
Berge, Richard D., Aurelia
Bergen, Charles T., Northwood
Berger, Raymond A., Davenport
Berggreen, Raymond G., Mason City
Bergstrom, Albin C., Missouri Valley
Berkstresser, Charles F., Sioux City
Bernard, Ransom D., Ames (L.M.)
Berndt, Allen E., Cedar Rapids
Berry, A. Erwin, Oelwein
Bessmer, William G., Davenport
Best, Gorden N., Council Bluffs
Bettler, Philip L., Sioux City
Beye, Cyrus L., Sioux City
Bezman, Harry S., Traer
Bickley, Donald W., Waterloo
Bierman, Martyn H., Jr., Council Bluffs
*Bierring, Walter L., Des Moines (L.M.)
Biersborn, Byron M., State Center
Billingsley, John W., Newton
Bird, Raymond G., Tarzana, California
Birge, Richard F., Des Moines
Bisgard, Carl V., Harlan
Bishop, James F., Davenport
Bishop, John J., Davenport
Bjornstad, Harry, Independence
Black, Harold C., Des Moines
Black, James E., Sioux City
Blackstone, Martin A., Sioux City
Blaha, George A., Whitten
Blair, Donald W., Des Moines
Blair, James B., Cherokee
Blanchard, Russell W., Waterloo
Blenderman, Albert D., Jr., Sioux City
Bliss, William R., Ames
Block, Charles E., Davenport
Block, Lawrence A., Davenport
Block, Walter M., Cedar Rapids
Blodi, Frederick C., Iowa City
Blome, Arthur L., Ottumwa
Blome, Glenn C., Ottumwa
Blome, Robert A., Iowa City
Blong, Theodore E., Stacyville
Bloom, Melvin H., Des Moines
Blosen, Rosemarie, Waterloo
Bluhm, Samuel, Muscatine
Blum, Aloysius A., Wall Lake
Blume, Donald B., Sioux City
Blumgren, John E., Vinton
Board, Thomas P., Waterloo
Bock, Don G., Fort Dodge
Bockoven, William A., Ames
Boden, Worthey C., Sioux City
Boe, Henry, Sioux City
Boggs, Leonard H., Sioux City
Boice, Clyde A., Washington (L.M.)
Boiler, William F., Iowa City (L.M.)
Boleh, Alfred P., Independence
Boller, Galen C., Waterloo
Bond, Thomas A., Des Moines
Bone, Harold C., Des Moines
Bonfiglio, Michael, Iowa City
Boone, Alex W., Davenport
Borgen, Donald L., Gowrie
Boris, Irving H., Iowa City
Bos, Howard C., Oskaloosa
Bose, Richard P., Estherville
Bossingham, Earl N., Clarinda
Boston, Burr C., Waterloo
Boulden, Roger W., Lenox
Boulware, Lois, Iowa City
Bourne, Melvin G., Algona
Bovenmyer, Dan A., Iowa City
Bovenmyer, DeVoe O., Ottumwa
Bowers, Arthur S., Orient (L.M.)
Bowers, Clifford V., Sioux City
Bowie, Louis L., Zearing (L.M.)
Boysen, James F., Sioux City
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Bradley, Carl L., Newhall
Braley, Alson E., Iowa City
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Bray, Daniel L., Algona
Bray, Louis B., Waukon
Brecher, Paul W., Storm Lake
Bremner, Robert N., Cedar Falls
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Brereton, Harold L., Emmetsburg
Bridge, Barton C., Jefferson
Bries, Frank J., North Buena Vista
Brindley, Robert W., Iowa City
Brinegar, Willard C., Cherokee
Brink, Raymond J., Emmetsburg
Brinkman, William F., Pocahontas
Brintnall, Edgar S., Iowa City
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Brody, Sidney, Ottumwa
Broers, Merlin U., Schleswig
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Brown, Addison W., Des Moines
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Brown, Carroll A., Sioux City
Brown, Douglas H., Forest City
Brown, Edmund C., Iowa City
Brown, Eugene F., Webster City
Brown, Gerald F., Anamosa
Brown, Ivan E., Hartley
Brown, James M., Sioux City
Brown, Kenneth R., Leon
Brown, Merle J., Davenport
Brown, Paul F., Maquoketa
Brown, Robert C., Mason City
Brown, Wayne B., Mount Pleasant
Brownstone, Manuel, Clear Lake
Brownstone, Sidney, Clear Lake
Brubaker, Carl F., Corydon
Bruce, James H., Fort Dodge (L.M.)
Brugger, Ralph M., Ames
Brummitt, Charles F., Centerville
Bruner, Julian M., Des Moines
Brunk, Amos W., Prescott
Brunkhorst, John B., Waverly
Brush, C. Herbert, Shenandoah (A.M.)
Brush, Frederick C., Mason City
Buchanan, John J., Milford
Buckles, Robert D., Waterloo
Buckwalter, Joseph A., Iowa City
Budd, Marjorie E., Indianola
Bullard, James A., Decorah
Bullock, Grant D., Inwood
Bullock, William E., Lake Park (L.M.)
Bunge, Raymond G., Iowa City
Burbank, Dean S., Pleasantville (L.M.)
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Burcham, Thomas A., Jr., Des Moines
Buresh, Abner, Lime Springs
Burgeson, Floyd M., Des Moines
Burian, Hermann M., Iowa City
Burke, Edmund T., Des Moines
Burke, Robert W., Jefferson
Burke, Thomas A., Mason City
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Burroughs, Hubert H., Sioux City
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Bushnell, John W., Sioux City
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Byers, Joseph R., Des Moines
Byram, Burns M., Marengo
Byrnes, Clemmet W., Dunlap
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Caffrey, John A., Ames
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Cahn, Philipp, Oakdale
Calbreath, Lloyd B., Humeston

Callaghan, Ambrose J., Jr., Sioux City
Callahan, George D., Iowa City
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Cameron, Richard R., Cedar Rapids
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Campbell, James B., Davenport
Campbell, Nathan, Yarmouth (A.M.)
Campbell, Thomas R., Sioux Rapids
Campbell, Walter V., Oskaloosa
Canady, George F., Jefferson
Cannon, William M., Waterloo
Cantwell, John D., Davenport (L.M.)
Caramela, Calvin A., Cedar Rapids
Caraway, Lynn D., Monticello
Carey, Edward T., Jr., Clinton
Carlile, Amos W., Manning (L.M.)
Carlson, Charles E., Ames
Carlson, Elmer H., Muscatine
Carlson, Frank G., Mason City (L.M.)
Carney, Robert G., Iowa City
Carpenter, Fred E., Newton
Carpenter, Ralph C., Marshalltown
Carr, Richard T., Jefferson
Carrigg, Lawrence G., Cedar Rapids
Carroll, Thomas J., Sibley
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Carson, Raymond W., Winterset
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Carstensen, Vincent H., Waverly
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Carver, David C., Knoxville
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Castles, William A., Dallas Center
Catalona, William E., Muscatine
Catlin, Karl A., Clarinda
Catterson, Leroy F., Oskaloosa
Caudill, George G., Des Moines
Caughlan, Gerald V., Council Bluffs
Cauley, Francis P., Anthon
Caulfield, John D., New Hampton
Cawley, Paul T., Carroll
Ceilley, Edward H., Cedar Falls
Chain, Leo W., Dedham
Chambers, James W., Des Moines
Chan, Pak-Chue, Ames
Chang, Luke (Chen-shu), Mason City
Chapler, Keith M., Dexter
Chapman, John S., Dubuque
Chapman, Robert M., Cedar Rapids
Chase, Sumner B., Fort Dodge
Chase, Walter E., Rippey
Chase, William B., Des Moines (L.M.)
Chase, William B., Jr., Des Moines
Cherwitz, Gordon, Davenport
Chesnut, Paul F., Winterset
Chesnutt, John C., Spencer
Chester, Walter S., Albia (A.M.)
Childs, Hal A., Creston (L.M.)
Chittum, John H., Wapello (L.M.)
Chong, Arnold Y., Iowa City
Christensen, Dale L., Lake City
Christensen, Eunice M., Spencer
Christensen, Everett D., Spencer
Christensen, Floyd D., Remsen
Christensen, John R., Palo Alto, Calif. (A.M.)
Christiansen, Charles C., Grand Mound
Christiansen, John E., Durant
Christopherson, Joseph E., Mason City
Chun, Newton, Dubuque
Clancy, John, Iowa City
Clapsaddle, Dean W., Clear Lake
Clapsaddle, John G., Burt
Clark, Clayton W., Nashua
Clark, George H., Oskaloosa (A.M.)
Clark, James P., Estherville
*Clark, Orson W., Ogden (A.M.)
Clark, Richardson E., Manchester
Clark, Samuel S., Des Moines
Clark, Thomas D., Knoxville
Clary, William H., Longmont, Colo. (L.M.)
Clasen, Henry W., Littleton, Colo. (L.M.)
Clemens, Albert L., Des Moines
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Closson, Charles L., Walker (L.M.)
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Cmeyla, Patrick M., Sioux City
Cobb, Elliott A., Cedar Rapids
Coble, Rollo J., Lake Park
Cochrane, Allen M., Perry
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Cody, William E., Sioux City (L.M.)
Coffey, James L., Emmetsburg
Coffman, Eugene W., Dubuque
Cogley, John P., Council Bluffs
Cohen, Sidney A., Council Bluffs
Colbert, Lawrence D., Royal
Cole, Charles E., Cherokee
Cole, Elmer J., Woodbine (L.M.)
Cole, Fern N., Iowa Falls
Cole, Julia, Ames
Coleman, Francis C., Des Moines
Collignon, Urban J., Council Bluffs
Collins, Alice Jeanne, Des Moines
Collins, John F., Fort Dodge
Collins, Loren E., Sioux City
Collins, Robert M., Council Bluffs
Collison, Robert M., Oskaloosa
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Conkling, Russell W., Newton
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Conlon, James B., Council Bluffs
Conmey, Roy M., Sergeant Bluff (L.M.)
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Cooper, Wayne K., Cedar Rapids
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Crawford, W. McCulloch, Burlington
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Cunningham, Melvin B., Norwalk
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Dawson, Orville L., Burlington
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DeBacker, Leo J., Jr., Iowa City
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Decker, Jay C., Sioux City (L.M.)
DeGowin, Elmer L., Iowa City
deGravelles, William D., Jr., Des Moines
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DeLashmutt, Edward J., Fort Madison
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Dennert, Walter G., Boone
Denser, Clarence H., Jr., Des Moines
Deranleau, Robert F., Perry
DeShaw, Earl H., Monticello
Des Marias, Varina, Grundy Center
Devine, Arthur W., Waterloo
Dewees, Frank L., Newton Square, Pa.
DeYoung, Ward A., Glenwood
Diamond, Bernard, Waterloo
Dick, Fred, Jr., Waterloo
Dickens, James H., Des Moines
Diddy, Keith W., Perry
Dieckmann, Merwin R., Waterloo
Dierker, LeRoy J., Fort Madison
Dimsdale, Lewis J., Sioux City
Ditto, Boyd L., Burlington (L.M.)
Ditto, Winston B., Rochester, Minn.
Dixon, John B., Mason City
Doane, Grace O., Des Moines (A.M.)
Dohnalek, Donald W., Harlan
Dolan, Albert M., Evansdale
Dolan, Thomas R., Monticello
Dolmage, George F., Buffalo Center (L.M.)
Donahue, James C., Jr., Davenport
Donohue, Edmund S., Sioux City
Donlin, Robert E., Harlan
Donnelly, Madelene M., Des Moines
Doolittle, Russell C., Clearwater, Fla. (L.M.)
Doran, John R., Ames
Dorner, Ralph A., Des Moines
Dorsey, Thomas J., Fort Dodge (L.M.)
Doss, W. Norman, Leon
Douglas, Clarence E., Belle Plaine
Down, Howard I., Sioux City
Downey, Eugene M., Guttenberg
Downing, Arthur H., Des Moines
Downing, John S., Cedar Rapids
Downing, Leroy M., Cedar Rapids (L.M.)
Downing, Lloyd L., Cherokee
Downing, Wendell L., LeMars
Downs, Vernon S., Ottumwa
Dressler, John B., Ida Grove
Drew, Edward J., Des Moines
Drier, William C., Waterloo
Driver, Richard W., Waterloo
Drown, Roger E., Fort Dodge
Dubansky, Marvin H., Des Moines
★Duffie, Edward R., Port Hueneme, Calif.
Dulin, Evelyn H., Iowa City
Dulin, John W., Iowa City
Dulin, T. J. G., Iowa City (L.M.)
Duncan, Ellis, Fremont
Dunlay, Robert W., Iowa Falls
Dunlevy, James H., Fairfield
Dunn, Dale E., Estherville
Dunn, Francis C., Cedar Rapids
Dunn, Robert C., Fort Dodge
Dunner, Ada, Des Moines
Dusdieker, Stanley W., Des Moines
Dutton, Dean A., Van Horne
Dwyer, Bernard B., Clinton
Dwyer, Robert E., Clinton
Dyson, James E., Phoenix, Arizona (A.M.)
Dyson, Ralph E., Des Moines

Eastburn, Harvey B., Burlington
Eaton, Robert C., Clarion
Ebinger, Edward W., Ottumwa
Echternacht, Arthur P., Fort Dodge
Eckart, Emile P., Fort Dodge
Eckstein, John W., Iowa City
Edelman, David L., Spokane, Washington
Edgerton, Winfield D., Davenport
Edington, Frank D., Spencer
Edwards, Charles C., Des Moines
Edwards, Charles V., Council Bluffs
Edwards, Charles V., Jr., Council Bluffs
Edwards, John F., Clinton
Edwards, Ralph R., Centerville
Egan, Thomas J., Bancroft
Egbert, Daniel S., Fort Dodge
Egermayer, George W., Elliott (L.M.)
Eggleston, Alfred A., Burlington
Ehlers, Gunther, Des Moines
Ehrenhaft, Johann L., Iowa City
Eicher, Charles R., Iowa City
Eiel, John O., Osage
Eisenach, John R., Shenandoah
Ekart, Paul I., Ottumwa
Eklund, Harold E., Des Moines
Eller, Lancelot W., Kanawha
Elliott, Olin A., Des Moines
Ellis, Howard G., Des Moines

Ellison, George M., Clinton
Ellsworth, H. Charles, Cherokee
Ellyson, Craig D., Waterloo
Elmer, Norman J., Sumner
Ely, Lawrence O., Des Moines
Emanuel, Dennis G., Ottumwa
Emerson, Donald D., Ottumwa
Emerson, Edward L., Muscatine
Emmons, Marcus B., Clinton
Emmons, Margaret S., Clinton
Emmons, Richard O., Clinton
Eneboe, Edward M., Hawarden
Engelmann, Andrew T., Sioux City
England, Billy J., Griswold
Enna, Melchior D., Dumont
Ennis, Harry H., Manchester (L.M.)
Entringer, Albert J., Dubuque
Entz, F. Harold, Waterloo
Erickson, Ernest D., Sioux City
Ericsson, Martin G., Cedar Falls
Erikson, Roland E., Davenport
Erps, William E., Storm Lake
Esders, Martin S., DeWitt
Estes, Maurice, Cedar Rapids
Evans, John E., Winterset
Evans, William I., Iowa City
Evers, Alvin E., Pella

Faber, Luke A., Dubuque
Faber, Luke C., Iowa City
Fail, Charles S., Adel
Fangman, Charles A., Carroll
Farago, Denes S., Arnolds Park
Farlow, Charles T., Farnhamville (L.M.)
Farnsworth, Harold E., Storm Lake
Farrage, Edward R., Council Bluffs
Fatland, John L., Des Moines
Faust, John H., Manson
Fee, Charles H., Denison
*Fee, Knight E., Toledo
Feightner, Robert L., Fort Madison
Feldick, Harley G., Buffalo Center
Fellows, Joseph G., Ames
Felter, Allan G., Van Meter
Fenlon, Charles E., Mason City
Fenton, Charles D., Bloomfield
Fenton, Robert L., Centerville
Ferengul, Ellen E., Mitchellville
Ferguson, Edward C., III, Iowa City
Ferguson, John W., Newton
Ferguson, R. Paul, Lake City
Fesenmeyer, Charles R., Davenport
Fickel, Jack D., Red Oak
Field, Charles A., Rochester, Minn.
Field, Grace E. W., Juneau, Alaska
Fieseler, Walter R., Fort Dodge
Fieselmann, George F., Spencer
Fillenwarth, Floyd H., Charles City
Fisch, Roman J., LeMars
Fischer, Harry W., Iowa City
Fisher, June Marie, Iowa City
Fisher, William A., Creston
Fishman, Harlow J., Cherokee
Fisk, Charlotte, Des Moines
Fitz, Annette Elaine, Iowa City
Flannery, Francis E., Cedar Rapids
Flater, Norman C., Floyd
Flatt, Adrian E., Iowa City
Flocks, Rubin H., Iowa City
Floersch, Eugene B., Council Bluffs
Flynn, Charles H., Clarinda
Flynn, Gordon A., Davenport
Flynn, James R., Jr., Cedar Rapids
Foley, Robert J., Davenport
Foley, Walter E., Davenport
Foley, Walter E., Jr., Davenport
Folsom, James C., Mount Pleasant
Fomon, Samuel J., Iowa City
Fordyce, Frank W., Johnston (A.M.)
Forsythe, Dorothy C., Newton
Forsythe, Frank E., Newton
Foss, Robert H., Des Moines
Foster, Morgan J., Cedar Rapids
Foster, Warren H., Clinton
Foster, Wayne J., Cedar Rapids
Foulk, Frank E., Backus, Minnesota (L.M.)
Fowler, Willis M., Iowa City
Fox, Charles I., Pella (L.M.)
Fox, Ray A., Charles City
Fox, Stephan, Ottumwa
Franchere, Chetwynd M., Mason City
Franey, William E., Cedar Rapids
Frank, Louis J., Sioux City
Frank, Owen L., Maquoketa
Fransco, Peter P., Ruthven
Fraser, James B., Des Moines
Fraser, John H., Monticello
Frech, Raymond F., Newton
Free, Richard M., Independence
Freed, David A., West Union
French, Royal F., Marshalltown (L.M.)
French, Valiant D., Cedar Falls
French, Vera V., Bettendorf
Frenkel, Hans S., Clarinda
Friday, Walter C., Burlington
Frink, Lyle F., Spencer
From, Paul, Des Moines
Frost, Loraine H., Iowa City
Fry, Gerald A., Vinton
Fuchs, Edwin M., Independence
Fuerste, Frederick, Jr., Dubuque
Fuller, Lyle R., Garner
Funk, David C., Iowa City
Furumoto, Kiyoshi, Keosauqua

Gacusana, Jose, Akron
Galinsky, Leon J., Des Moines
Gallagher, John P., Oelwein
Gamet, Elmo E., Lamoni
Gangeness, Leonard G., Des Moines
Gann, Edward R., Sigourney
Gannon, James, Laurens
Gantz, Albert J., Greenfield
Ganzhorn, Harold L., Mapleton
Gardner, Harold O., Waterloo
Gardner, John R., Lisbon (L.M.)
Garland, John C., Marshalltown
Garred, John L., Whiting
Garred, William P., Onawa
Garry, Patrick E., Dyersville
Garvy, Andrew C., Iowa City
Gauchat, Robert D., Iowa City
Gauger, John W., Early
Gaukel, Leo A., Onawa
Gault, James B., Creston
Gearhart, George W., Springville (L.M.)
Gee, Kenneth J., Shenandoah
Gehring, John V., Cherokee
Gelfand, Arthur B., Sioux City
Gelfand, Ben B., Sioux City
Gelman, Webster B., Iowa City
George, Everett M., Los Angeles, Calif.
George, Louis A., Remsen
Gerard, Russell S., II, Waterloo
Gerken, James F., Waterloo
Gernsey, Merritt N., Long Beach, Calif (L.M.)
Gerstman, Herbert, Marion
Gessford, Howard H., George
Getty, Everett B., Primghar
Gibbon, William H., Sioux City
Gibbs, George M., Burlington
Gibson, Chelsea D., Sac City
Gibson, Douglas N., Des Moines
Gibson, Paul E., Des Moines
Gibson, Preston E., Davenport
Geigerich, Walter F., Atlantic
Gildea, Dorothy J., Davenport
Giles, Francis E., Fort Dodge
Giles, W. Clark, Council Bluffs
Gilfillan, Clarence D. N., Pomona, Calif
Gilfillan, Earl E., Bloomfield
Gilfillan, Edwin O., Bloomfield
Gilfillan, Homer J., Jr., Bloomfield
Gillett, Francis A., Oskaloosa (L.M.)
Gillett, R. Giles, Sigourney
Gillies, Carl L., Iowa City
*Gillmor, Benjamin F., Red Oak (L.M.)
Gingles, Earl E., Onawa
Ginzberg, Fanny T., Cherokee
Gittins, Thomas R., Sioux City
Gittler, Ludwig, Fairfield
Gius, John A., Iowa City
Givler, Robert L., Iowa City
Glenn, David H., Eldora
Glesne, Otto N., Fort Dodge
Glissman, Jean B., Des Moines
Glomset, Daniel A., Des Moines
Goad, Robley R., Muscatine
Goddard, Chester R., Iowa City
Goddard, William B., Iowa City
Godfrey, James T., Jr., Cherokee
Goebel, Clarence J., Sioux City
Goebel, Kenneth E., Council Bluffs
Goen, Edwin J., Charles City
Goenne, Richard E., Davenport
Goenne, William C., Sr., Davenport
Goggin, John G., Ossian
Goldberg, J. Eugene, Waterloo
Goldberg, Louis, Des Moines
Goldman, Bernard R., Davenport
Gonior, Thomas H., Cherokee
Goodenow, Sidney B., Colo (L.M.)
Goodman, Lawrence O., Marshalltown
Goplerud, Clifford P., Iowa City
Gordon, Arnold M., Des Moines
Gorrell, Ralph L., Clarion
Gorton, Virginia Gross, Mount Pleasant
Gottsch, Edwin J., Shenandoah
Gower, Walter E., Fort Dodge
Graham, James W., Sioux City
Graham, Thomas C., Iowa Falls
Grahek, Lawrence J., Oskaloosa
Grandinetti, Arthur F., Oelwein
Grandia, Abron A., Iowa City
Grandon, Eugene L., Iowa City
Grant, John G., Ames
Grau, Amandus H., Denison
Graves, John P., Dubuque
Gray, Gordon W., Davenport
Gray, John F., Melcher (L.M.)
Gray, Ralph E., Eldora
Gray, Lawrence R., Ankeny
Greco, Louis R., Jr., Boone
Green, David, Iowa City
Green, Don C., Des Moines
Green, Edward W., Iowa City
Green, John W., Jr., Des Moines
Greenblatt, Jerald, Cedar Rapids
Greenhill, Solomon, Des Moines
Greenleaf, John S., Iowa City
Greteman, Theodore J., Dubuque
Griesy, Carl V., Rock Rapids
Griffin, Charles C., Dyersville
Griffin, Robert E., Sheldon
Griffith, William O., Council Bluffs
Griffith, Wylie H., Clinton
Grimmer, George T., Albany, N. Y.
Groben, Elmer S., Columbus Junction
Grossman, Milton D., Sioux City
Grossman, Raymond S., Marshalltown
Grossmann, Edward B., Orange City
Grubb, Merrill W., Galva
Grundberg, Gerhard, Dows
Gude, Herbert E., Iowa Falls
Guggenheim, Paul, Council Bluffs
Gugle, Lloyd J., Ottumwa
Guiang, Sixto F., Burlington
Gurau, Henry H., Des Moines
Gustafson, John E., Des Moines
Gutch, Roy C., Chariton
Gutenkauf, Charles H., Des Moines

Hach, Felix T., Ankeny
Hagen, Edward F., Decorah
Haines, Diedrich J., Des Moines
Hake, Dexter H., Knoxville
Halbert, Helen E., Davenport
Hale, Albert E., Mason City
Hall, Bonnybel A., Maynard
Hall, Cluley C., Maynard
Hallam, F. Tulley, Des Moines
Hallberg, Harold C., Oelwein
Halpin, Lawrence J., Cedar Rapids
Hamilton, Benjamin C., Jefferson (L.M.)
Hamilton, Cecil V., Ames
Hamilton, Henry E., Iowa City
Hamilton, William K., Iowa City
Hammer, Richard W., Des Moines
Hansell, William W., Des Moines
Hansen, David M., Cedar Falls
Hansen, Fred A., Red Oak
Hansen, Niels M., Des Moines
Hansen, Robert R., Marshalltown (L.M.)
Hansen, Russell R., Storm Lake
Hanson, Carl A., Waterloo
Hanson, Henry M., Waverly
★Hanson, Paull R., Spokane, Washington
Hanson, Walter N., Mason City
Hanssmann, Irving J., Council Bluffs
Hardin, John F., Bedford
Hardin, Robert C., Iowa City
Harding, Dale A., Eagle Grove
Hardwig, Oswald C., Waverly
Harken, Conreid R., Osceola (L.M.)
Harkness, Gordon F., Davenport (L.M.)
*Harman, Dean W., Glenwood
Harms, George E., Norway
Harned, Lewis B., Waterloo
Harper, George E., Fort Madison
Harper, Harry D., Fort Madison
Harper, William H., Jr., Keokuk
Harpring, Alice Jeanne, Davenport
*Harrington, Arlan F., Cedar Rapids
Harrington, Raymond J., Sioux City
Harris, Percy G., Cedar Rapids
Harris, Ray R., Dubuque (L.M.)
Hart, Paul V., Des Moines
Hartley, Byron D., Mount Pleasant
Hartman, Frank T., Waterloo (L.M.)
Hartman, Howard J., Waterloo
Harvey, Glen W., Cedar Rapids
Harwood, Arthur M., Waverly
Hassebroek, Roy J., Orange City
Hastings, Philip R., Waterloo
Hastings, Richard A., Ottumwa
Hatfield, Mary A., Lawrence, Kansas
Haufe, W. David, Bloomfield
Haugland, Stanley M., Lake Mills
Hausheer, Myron R., Oakland
Havlik, Al J., Tama
Hawkins, Charles P., Clarion
Hayden, Milford D., Marcus
Hayes, William P., Cedar Rapids
Hayne, Robert A., Des Moines
Hayne, Willard W., Des Moines
Hazlet, Kenneth K., Dubuque

Hecker, John T., Cedar Rapids
Heeren, Ralph H., Des Moines
Heffernan, Chauncey E., Sioux City
Hege, John H., Independence
Hegg, Lester R., Rock Valley
Hegstrom, George J., Ames
Heilman, Elwood H., Richmond, Va.
Heilman, Robert D., Houston, Texas
Heimann, Verne R., Sioux City
Heine, George W., Cedar Falls
Heise, Carl A., Jr., Jewell
Heise, Harris R., Marshalltown
Heise, Robert H., Story City
Heitzman, Paul O., Cedar Rapids
Helling, Harry B., Fort Madison
Helseth, Carleton T., Des Moines
Henderson, Lauren J., Cedar Falls
Henderson, Walker B., Oelwein
Hendricks, Atlee B., Davenport
Hendrickson, Alvin H., Sioux City
Henkin, John H., Sioux City
Henn, Samuel C., Cedar Falls
Hennes, Raphael J., Oxford
Hennessey, John M., Manilla
Hennessy, Felix A., Calmar (L.M.)
Hennessy, J. Donald, Council Bluffs
Henningsen, Artemus B., Clinton
Henstorf, Harold R., Shenandoah
Herlitzka, Alfred J., Mason City
Herman, John C., Boone
Herny, Peter M., Prairie City
Herrick, Walter E., Ottumwa
Herrmann, Christian H., Jr., Middle
Hersey, Nelson L., Independence
Hertko, Edward J., Des Moines
Hess, John, Jr., Des Moines
Heuermann, Dorothy J., Coulter
Heusinkveld, Henry J., Clinton (A.M.)
Hickenlooper, Carl B., Winterset (L.M.)
Hickey, Robert C., Iowa City
Hickman, Charles S., Centerville (L.M.)
Hicks, Wayland K., Sioux City
Hierschbiel, Ernst A., Iowa City
Hildebrand, Howard H., Ames
Hill, Don E., Clinton
Hill, James W., Mount Ayr (L.M.)
Hill, J. F., Santa Barbara, Calif. (L.M.)
Hill, Lee Forrest, Des Moines
Hines, Ralph E., Des Moines
Hintz, D. C., San Mateo, Calif.
Hirleman, Hal R., Cedar Rapids
Hirsch, Harry N., Sioux City
Hirsch, Michael R., Des Moines
Hirst, Donald V., Council Bluffs
Hodges, Robert E., Iowa City
Hoffman, Paul M., Tipton (L.M.)
Hoffman, Robert M., Iowa City
Hoffmann, Robert W., Des Moines
Hogenson, George B., Eagle Grove
Hollander, Werner M., Davenport
Hollis, Edward L., Marengo (L.M.)
Holman, David O., Ottumwa
Holtey, Joseph W., Ossian
Holzworth, Paul R., Des Moines
*Hombach, Walter P., Council Bluffs
Hommel, Placido R. V., Elkader
Honke, Edward M., Sioux City
Hooley, John S., Sigourney
Hopkins, David H., Des Moines (A.M.)
Hopp, Ralph L., Council Bluffs
Horn, Gilbert O., Cherokee
Hornaday, William R., Des Moines
Hornberger, John R., Manning
Horsley, Arthur W., Iowa City
Horst, Arthur W., Sioux City
Hosford, Horace F., Burlington
Hostetter, John I., Des Moines
Hostetter, Mary S., Des Moines
Houghton, Earl J., Bettendorf
Houlahan, Jay E., Mason City
Houlihan, Francis W., Ackley
Houser, Cass T., Cedar Rapids (L.M.)
Housholder, Harold A., Winthrop (L.M.)
Howar, Bruce F., Webster City
Howard, Dwayne E., Sioux City
Howard, Lloyd G., Council Bluffs
Howe, Gerald W., Iowa City
Howell, David A., Dubuque
Howell, Elias B., Ottumwa (L.M.)
Hoyt, John L., Creston
Hruska, Glen J., Belmond
Huber, Robert A., Charter Oak
Hubiak, John, Odebolt
Hudek, Joseph W., Garnavillo (L.M.)
Huey, John R., Cedar Rapids
Huffman, William C., Iowa City
Hughes, Parker K., Des Moines
Hughes, Walter W., Davenport
Hull, Gene I., Des Moines
Hulstra, Hans (Johannes), Iowa City
Hunt, Van W., Mason City
Hunting, Ralph D., Cedar Rapids
Huntley, Charles C., Avoca
Hurevitz, Hyman M., Davenport
Huston, Daniel F., Burlington
Huston, John, Jr., Cedar Rapids
Huston, K. Garth, Des Moines
Huston, Marshall D., Cedar Falls
Huston, Paul E., Iowa City
Hutchinson, Roy M., Fort Dodge
Hyatt, Charles N., Corydon

Ihle, Charles W., Cleghorn (L.M.)
Ingham, Donald W., Independence
Ingham, Paul G., Mapleton
Ingle, Newell G., Cedar Rapids
Ingraham, David R., Sewal
Ireland, William W., Ottumwa
Irish, Thomas J., Forest City
Irvine, Jack E., Marshalltown
Irving, Noble W., Jr., Des Moines
Isham, Robert B., Osage

Jack, Darwin B., Oelwein
Jackson, James M., Fort Carson, Colo. (L.M.)
Jackson, James S., Mount Pleasant
Jacobi, Heinz S., New Hampton
Jacobs, Carl A., Sioux City
Jacobs, Edward L., Conrad
Jacobs, James P., Iowa City
Jacobs, Moody D., Decatur, Alabama
Jacobs, Richard L., Iowa City
Jacques, Lewis H., Iowa City
Jaenicke, Kurt, Clinton (L.M.)
Jaffe, Harold, Iowa City
Jaggard, Robert S., Oelwein
James, Audra D., Des Moines (A.M.)
James, David W., Des Moines
James, Lora D., Fairfield (L.M.)
James, Peter E., Audubon (L.M.)
Janse, Phillip V., Algona (L.M.)
January, Lewis E., Iowa City
Jaquis, John R., Reinbeck
Jardine, G. A., New Virginia (A.M.)
Jarvis, Harry D., Chariton (L.M.)
Jaskunas, Stanley R., Bloomfield
Jauch, Karl E., LaPorte City
Jeffries, James H., Waterloo
Jeffries, Milo E., Marshalltown
Jeffries, Roy R., Waukon
Jenkins, George A., Albia (L.M.)
Jenkins, George D., Burlington
Jenkins, Hanley F., Des Moines
Jenkinson, Harry R., Iowa City
Jenks, Alonzo L., Jr., Des Moines
Jensen, Kenneth V., Clarinda
Jensen, Arno L., Clinton
Jensen, LeRoy E., Audubon
Jensen, Ralph, Ames
Jerdee, Ingebrecht C., Clermont
Jerome, Peter, Davenport
Jewel, Philip D., Iowa City
Johann, Albert E., Des Moines (A.M.)
Johnson, Aaron Q., Sioux City
Johnson, Charles O., Des Moines
Johnson, Clarence A., Coon Rapids
Johnson, Eugene L., Spirit Lake
Johnson, G. Raymond, Ottumwa
Johnson, Harvey A., Atlantic
Johnson, Merton A., Nevada
Johnson, Norman M., Clarinda
Johnson, Richard M., Denison
Johnson, Robert J., Iowa Falls
Johnson, Robert M., Des Moines
Johnston, C. Harlan, Des Moines
Johnston, George B., Estherville
Johnston, Harry L., Ames
Johnston, Helen, Des Moines (A.M.)
Johnston, Wayne A., Dubuque (A.M.)
Jones, Cecil C., Des Moines (A.M.)
Jones, Charles L., Gilmore City (L.M.)
Jones, Clare C., Spencer
Jones, G. William, Des Moines
Jones, Harold W., Sioux City
Jones, Harry J., Cedar Rapids (L.M.)
Jones, Maynard L., Newton
Jongewaard, Albert J., Jefferson
Jongewaard, Robert E., Scranton
Joranson, Robert E., Council Bluffs
Jordan, John W., Maquoketa
Jowett, John R., Clinton
Joyce, George T., Mason City
Joynt, Albert J., Waterloo
Joynt, Michael F., Marcus (L.M.)
Joynt, Robert J., Iowa City
Judiesch, Kenneth J., Iowa City
Juel, Einer M., Atlantic

Kaack, Harry F., Jr., Clinton
Kaelber, William W., Iowa City
Kahler, Hugo V., Reinbeck (L.M.)
Kane, Thomas E., Boone
Kanealy, John F., Cedar Rapids
Kanis, Stewart F., Pella
Kapke, Franklin W., Mason City
Kaplan, David D., Sioux City
Kaplan, Robert M., Davenport
Kapp, David F., Dubuque
Karp, Leon M., Lake City
Kasiske, Walter B., Keokuk
Kassmeyer, John C., Dubuque
Kast, Donald H., Des Moines
Katzmann, Frederick S., Des Moines
Kaufmann, Robert J., Newton
Keane, Kenneth M., Sioux City
Kearney, William W., West Union
Keech, Roy K., Cedar Rapids (L.M.)
Keeney, George H., Mallard (L.M.)
Keettel, William C., Iowa City
Kehoe, Joseph L., Davenport
★Keil, Philip G., Washington, D. C.
Keiser, Orris S., Muscatine
Keith, Charles W., Strawberry Point (L.M.)
Keith, John J., Marion
Kelberg, Melvin R., Sioux City
Keller, Erwin F., Davenport
Keller, John T., Iowa City
Kelley, John H., Des Moines
Kelley, Newell R., Des Moines
Kelly, Alma C. B., Des Moines
Kelly, Anthony H., Sioux City
Kelly, Clarkson L., Jr., Charles City
Kelly, Dennis H., Des Moines (A.M.)
Kelly, Dennis H., Jr., Des Moines
Kelly, John F., Sioux City
Kelly, John F., Fort Dodge
★Kelly, Thomas W., Riceville
Kelly, William J., Dubuque
Kelsey, James E., Des Moines
Kelso, James J., Des Moines
Kemp, Robert R., Keokuk
Kenefick, John N., Algona
Kennedy, Edwin D., Mason City
Kennedy, Elizabeth Smith, Oelwein (L.M.)
Kent, Robert W., Oakdale
Kent, Thomas H., Iowa City
Keohen, Gerald F., Dubuque
Kepros, Peter F., Cresco
Kern, George A., Des Moines
Kern, Lester C., Waverly (L.M.)
*Kerr, W. Hawley, Hamburg
Kershner, Frank O., Clinton (A.M.)
Kersten, Herbert H., Fort Dodge
Kersten, John R., Fort Dodge
Kersten, Paul M., Fort Dodge
Kestel, John L., Waterloo
Kettelkamp, Enoch G., Monona
Kettelkamp, Richard G., Monona
Kettelkamp, William E., Cedar Rapids
Keyser, Earl L., Marshalltown
Keyser, Ralph E., Marshalltown (L.M.)
Kieck, Ernest G., Etowah, N. C. (A.M.)
Kiernan, Thomas E., Sioux Center
Kiesau, Milton F., Postville
Kiesling, Harry F., Lehigh
Kilgore, Ben F., Des Moines
Kimball, Glenn J., Des Moines
Kimball, John E., West Liberty (L.M.)
Kimberly, Lester W., Davenport
King, Dean H., Spencer
King, Ross C., Clinton
Kingsbury, Kenneth R., Ottumwa
Kirch, Walter A., Des Moines
Kirchheim, Dieter, Des Moines
Kirkendall, Walter M., Iowa City
Kirkham, Lindsay J., Mason City
Klein, John L., Jr., Muscatine
Klein, Robert F., Muscatine
Kleinberg, Henry E., Des Moines
Klocksiem, Harold L., Des Moines
Klocksiem, Roy G., Rockwell City
Klok, George J., Council Bluffs
Kluever, Herman C., Fort Dodge
Knight, Benjamin L., Cedar Rapids
Knight, Edson C., Marshalltown
Knight, Russell A., Rockford
Knipfer, Robert L., Jesup
Knosp, Alton A., Paton
Knosp, Norman C., Belle Plaine
Knott, James L., Council Bluffs
Knott, Peirce D., Sioux City
Knowles, Fred L., Fort Dodge
Knox, Robert M., Des Moines
Koch, John Stuart, Cedar Rapids
Koelling, Lloyd H., Newton
Kohrs, Edward F., Davenport
Koob, Dean F., Algona
Koons, Claude H., Des Moines
Koontz, Lyle W., Vinton
Kopecky, Edward F., Cedar Rapids
Kopsa, Walter J., Tipton
Kornder, Louis H., Davenport
Korns, Horace M., Iowa City
Korson, Selig M., Independence
Kos, Clair M., Iowa City

Koser, Donald C., Cherokee
Kosieradzki, Henry, Marshalltown
Krettek, John E., Council Bluffs
Krigsten, Joe M., Sioux City
Krigsten, William M., Sioux City
Kroack, Kalman J., Buffalo Center
Kruckenberg, William G., Cedar Rapids
Krueger, Norman L., Casey
Kruml, Joseph G., Council Bluffs
Kruse, Otto E., Tipton
Kruse, Rolf F., Waterloo
Kruse, Rufus H., Marshalltown
Kruse, Steven, Slater
Kuehn, Willard G., Clarinda
Kugel, Robert B., Iowa City
Kuhl, Augustus B., Jr., Davenport
Kuhl, Robert H., Creston
Kuker, Leo H., Carroll
Kurtz, Cecilia M., Cedar Rapids
Kyer, Donald L., Dubuque
Kyle, William S., Washington (L.M.)

Lagen, Mansfield S., Dubuque
Lagoni, Ralph P., Eldridge
Laimins, Peter T., Cedar Falls
Lake, Carlton B., Cedar Rapids
LaMar, John W., Des Moines
Lamb, Harry H., Davenport
Lambrecht, Paul B., Des Moines
Landhuis, Leo R., Fort Dodge
Landry, Gerard R. F., Council Bluffs
Langworthy, Henry G., Dubuque (L.M.)
Lanich, Oscar K., Waterloo
Lannon, James W., Mason City
LaPorte, Paul A., Des Moines
Larimer, Robert C., Sioux City
Larimer, Robert N., Sioux City
Larsen, Elmer A., Centerville
Larsen, Frank S., Fort Dodge
Larsen, Harold T., Fort Dodge
Larsen, Lawrence V., Harlan
Larson, Andrew G., Dickens (L.M.)
Larson, Carroll B., Iowa City
Larson, Erling, Jr., Davenport
Larson, Gerald E., Elk Horn
Larson, John A., Fort Madison
Larson, Lester E., Decorah
Larson, Marvin O., Hawarden
Larson, Walter W., Ames
LaRue, Jack L., Anita
Latchem, Charles W., Des Moines
Latimer, Milton J., Burlington
Latourette, Howard B., Iowa City
Laube, Paul J., Dubuque
Laughlin, Lawrence L., Coralville
Laughlin, Ralph M., Cedar Rapids
Lauvstad, Edward E., Osceola
Lavender, John G., George
Lawler, Matthew P., Jr., Des Moines
Lawlor, Jeremiah F., Cherokee
Lawrence, Montague S., Iowa City
Layton, Jack M., Iowa City
Lederman, Joseph, Oskaloosa
Ledogar, Joseph A., Webster City
Lee, Richard H., Dubuque
Lee, Robert W., Fort Dodge
Lee, Wayne R., Burlington
Leehey, Paul J., Independence
Leffert, Frank B., Centerville
Lehman, Emery W., Bluffton, Ind. (L.M.)
Lehr, Sylvan M., Cedar Rapids
Leibel, Lynn L., Council Bluffs
Leinbach, Samuel P., Belmond
Leinfelder, Placidus J., Iowa City
Leiter, Herbert C., Sioux City
Lekwa, Alfred H., Story City
Lemke, Betty A. Teig, Des Moines
Lemon, Kenneth M., Oskaloosa
Lenzmeier, Albert J., Davenport
Leonard, Thurman K., Madrid
LePoidevin, Jean S., Waterloo
Lerner, Ernest N., Mount Pleasant
Lesiak, John J., Titonka
Levy, James W., Sioux City
Lewis, Faye Cashatt, Webster City
Lewis, William B., Webster City
Lichtenberg, Robert P., Keokuk
Lierle, Dean M., Iowa City
Lierman, Clifford E., Lake View
Light, Henry R., Grinnell
Liken, John A., Creston
Limbert, Edwin M., Council Bluffs
Lindell, Sherman E., LeMars
Linder, Enfred E., Ogden
Lindholm, Claire V., Armstrong
Lindholm, Hugo A., Armstrong
Lindley, Ellsworth L., Cedar Rapids
Linge, Scott, Fayette
Linthacum, Robert W., Dysart
Liska, Edward J., Ute
Lister, Eugene E., Dallas Center
Lister, Kenneth E., Ottumwa
Lloyd, John M., Washington
Locher, Robert C., Cedar Rapids
Lockhart, Harold A., Cedar Rapids
Loeck, John F., Independence
Loes, Anthony M., Dubuque (L.M.)
Lohman, Frederick H., Waterloo
Lohmann, Carl J., Burlington
Lohnes, John H., Cedar Rapids
Lohr, Phillips E., Churdan
Long, Draper L., Mason City
Longworth, Wallace H., Boone
Looker, Richard F., Cedar Rapids
Loomis, Frederic G., Waterloo
Lorfeld, Gerhard W., Davenport
Losh, Clifford W., Des Moines (L.M.)
Losh, Clifford W., Jr., Des Moines
Lovejoy, E. Parish, Des Moines
Loving, Luther W., Estherville
Lowry, Charles F., Council Bluffs
Lowry, Earl C., Des Moines
Loxterkamp, Edward L., Rolfe
Ludwig, Clarence J., Waterloo
Luehrsmann, Bernard C., Dyersville
Luhman, Lowell A., Iowa City
Luke, Edward, Washington, D. C. (L.M.)
Lulu, Donald J., Des Moines
Lutton, John D., Sioux City
Lyons, Mary Louise, Des Moines

MacGregor, John K., Mason City
MacLeod, Hugh G., Greene
MacQueen, John C., Iowa City
McAllister, William G., Manly
McBride, Robert H., Sioux City
McCaffrey, Eugene H., Des Moines (A.M.)
McCall, John H., Allerton (L.M.)
McCarthy, Frank D., Sioux City
McClean, Earl D., Des Moines (L.M.)
McClellan, John W., Onawa
McClure, Gail A., Ames
McClurg, Frank H., Fairfield
McConkie, Edwin B., Cedar Rapids
McConnell, Robert W., Davenport
McCool, Robert F., Clarion
McCormack, William C., Ames
McCoy, Harold J., Des Moines
McCoy, John T., Cedar Falls
McCrary, W. Ashton, Lake City
McCreedy, Murry L., Washington
McCreight, George C., Carmel Valley, Calif. (A.M.)
McCrory, Wallace W., Iowa City
McCuistion, Harry M., Sioux City
McDonald, Don J., Cedar Rapids
McDowall, Gilbert T., Gladbrook (L.M.)
McEleney, Donald A., Cedar Rapids
McFadden, F. Ross, Davenport
McFarland, Guy E., Ames (L.M.)
McFarland, Guy E., Jr., Ames
McFarland, Julian E., Ames (A.M.)
McFarlane, Donald J., Dubuque
McFarlane, John A., Sioux City
McGarvey, Cornelius J., Des Moines
McGee, John E., Fort Madison
*McGeehon, Robert C., Indianola
McGilvra, Arthur L., Sioux Center
McGinnis, George C., Fort Madison
McGrane, Merle J., New Hampton (A.M.)
McGuire, Kenneth L., Keota
McIllece, Raymond C., Fort Madison
McIntosh, Philip D., Ottumwa
McIntyre, Caryl C., Waterloo
McKay, Kenneth H., Muscatine
McKay, Richard V., Jr., Dubuque
McKean, Frank F., Allison
McKee, Albert P., Iowa City
McKibben, Joe T., Carroll
McKitterick, John C., Burlington
McLaughlin, Philip A., Coralville
McMahon, Arthur E., Jr., Mason City
McMahon, John M., Iowa City
McMahon, Thomas, Garner (L.M.)
McMeans, Thomas W., Davenport
McMillan, George J., Fort Madison
McMillan, James T., III, Des Moines
McMurray, Edward A., Newton
McMurray, Harry N., Burlington
McNamara, Robert J., Dubuque
McNamee, Jesse H., Des Moines
McQuiston, J. Stuart, Cedar Rapids
McTaggart, William B., Fort Dodge
McVay, Melvin J., Lake City
Magaret, Ernest C., Glenwood
Magee, Emery E., Waterloo (L.M.)
Maher, Louis L., Des Moines
Mahoney, James D., Council Bluffs
Mailliard, Robert E., Storm Lake
Maixner, Reynold E., Ottumwa
Maixner, William D., Ottumwa
Maland, Donald O., Cresco
Malek, John C., Iowa City
Maltry, Emile, Jr., Fort Dodge
Manderscheid, Robert A., Boone
Mangan, J. Thomas, Forest City
Manning, Ephraim L., Davenport
Manoles, Elias N., Rochester, Minn.
Maplethorpe, Charles W., Sr., Toledo (L.M.)
Maplethorpe, Charles W., Jr., Toledo
Marble, Edwin J., Marshalltown
Marble, Willard P., Marshalltown
Margules, Maurice P. J., Council Bluffs
Margulies, Harold, Des Moines
Marienau, Fred E., Sac City
Marinos, Harry G., Mason City
Maris, Cornelius, Sanborn
Mark, Edward M., Clarksville
Mark, Milton S., Des Moines
Marker, John I., Davenport
Markham, William S., Harlan
Marme, George W., DeWitt
Marquis, Fred M., Waterloo
Marquis, George S., Des Moines
Marriott, Charles M., Sioux City
Marsh, Frederick E., Council Bluffs
Marsh, Frederick E., Jr., Council Bluffs
Martin, James W., Holstein
Martin, Josef R., Carroll
Martin, Ronald F., Sioux City
Martin, Sidney D., Carroll (L.M.)
Marty, Sophocles D., Mason City
Mason, Edward E., Iowa City
Mast, Truman M., Washington
Mater, Dwight A., Knoxville
Mathiasen, Emmett B., Council Bluffs
Mathiasen, Henning W., Council Bluffs
Mathiasen, John W., Council Bluffs
Matthews, Alexander, Mason City
Matthey, Carl H., Davenport
Matthey, Walter A., Bettendorf (L.M.)
Mattice, Roger J., Sioux Rapids
Maughan, John F., Baxter
Maxwell, Charles T., Sioux City
Maxwell, John R., Iowa City
May, George A., Forest Grove, Oregon (A.M.)
May, J. T., Cherokee
Mayer, Paul D., Cherokee
Mayner, Frank A., Montrose
Mazur, Theodore T., Burlington
Meffert, Clyde B., Cedar Rapids
Megorden, W. H., Mount Pleasant
Mehrl, William J., Cascade
Melampy, C. Nelson, Ottumwa
Melgaard, Robert T., Dubuque
Melichar, Paul J., Garner
Mellen, Robert G., Clinton
Meng, Ralph H., Sykesville, Md.
Merillat, Herbert C., Des Moines
Merkel, Byron M., Des Moines
Merritt, Arthur M., Des Moines (L.M.)
Merritt, F. Benjamin, Dubuque
Merritt, James O., Des Moines
Merselis, Harold K., Audubon
Merulla, Charles A., Marion
Meservey, Maynard A., Jr., Des Moines
Metzner, Franz N. A., Dubuque
Meyer, Alfred K., Clinton
Meyer, Robert J., Wellsburg
Meyers, Frank W., Dubuque (L.M.)
Meyers, Paul T., Bloomfield
Meyers, Robert P., Ottumwa
Michaelson, Beryl F., Dakota City
Michaelson, Don, Sac City
Michaelson, Manly, Bellevue
Michel, Gene E., Sac City
Michelfelder, Theodore J., Fort Dodge
Michener, Robert B., Iowa City
Middleton, William H., Cedar Rapids
Mikelson, Clarence J., Waterloo
Miller, Chester I., Iowa City
Miller, Donald F., Williamsburg
Miller, Enos D., Wellman (L.M.)
Miller, Garfield, Calmar
Miller, Herbert P., Iowa City
Miller, Howard L., Cedar Rapids
Miller, Jay R., Wellman
Miller, Keith E., Agency
Miller, Lawrence A., North English
Miller, Lawrence A., II, North English
Miller, Richard L., Waterloo
Miller, Robert C., Waterloo
Miller, Temple M., Muscatine
Mills, Keith F., Lone Tree
Miltner, Leo J., Davenport
Minassian, Thaddeus A., Des Moines (L.M.)
Mincks, James R., Bloomfield
Mirick, Donald F., Clinton
Mitchell, Claire H., Cincinnati (L.M.)
Mitchell, Duane E., Mount Ayr

Mitchell, Richard C., Waterloo
Moberly, John W., Dubuque
Mochal, John L., Independence
Moeller, Jay A., Dubuque
Moen, Stanley T., Cedar Rapids
Moermond, James O., Buffalo Center
Moershel, Henry G., Homestead
Moershel, William J., Cedar Rapids
Moes, John R., Waterloo
Moessner, Harold, Amana
Moles, Marvin R., Newton
Monahan, Joseph L., Clinton
Monnig, Philip J., Sioux City
★Montgomery, Albert E., Fort Carson, Colo.
Montgomery, George E., Ames
Montgomery, Guy E., Washington
Montz, Fred, Lowden
Moon, Barclay J., Cedar Rapids
Mooney, James C., Des Moines
Moore, Carlyle, C., Emmetsburg
Moore, Edson E., Fort Dodge
Moore, Jesse C., Eldon (L.M.)
Moore, Pauline V., Iowa City
Moore, Richard M., Des Moines
Moorehead, Harold B., Underwood
Mordaunt, Richard H., Nevada
Morgan, Dale D., Marion
Morgan, Francis W., Ottumwa
Morgan, Harold W., Mason City
Morgan, Jack N., Fairfield
Morgan, Paul W., Mason City
Morgan, Rex L., Sioux City
Morganthaler, Otis P., Templeton (L.M.)
Moriarty, Darwin L., Council Bluffs
Morrison, Robert E., Waterloo
Morrison, Roland B., Carroll
Morrissey, George E., Davenport
Morrissey, William J., Des Moines
Mosher, Martin L., Jr., Iowa City
Motto, Edwin A., Davenport
Mountain, George E., Des Moines
Moyers, Jack, Iowa City
Mueller, Albert C., Iowa City
Mugan, Robert C., Sioux City
Mulry, William C., Keokuk
Mulsow, Frederick W., Cedar Rapids
Mumford, Earl M., Sioux City
Munger, Elbert E., Jr., Spencer
Munns, Richard E., Hampton
Murphey, Arlo L., Fredericksburg
Murphy, Cornelius B., Alton
Murphy, George C., Waterloo
Murphy, Robert E., Fort Madison
Murphy, Thomas W., Iowa City
Murray, Frederick G., Cedar Rapids (L.M.)
Murray, Jonathan H., Burlington
Murtaugh, James E., New Hampton
Myerly, William H., Des Moines
Myers, Frank L., Sheldon
Myers, Kermit W., Sheldon
Myers, Robert W., Monticello

Nakashima, Victor K., Dubuque
Nash, Warren, Waterloo
Neal, Emma Jewel, Cedar Rapids (L.M.)
Nederhiser, Morgan I., Cascade (A.M.)
Needles, Roscoe M., Atlantic
Neff, Herbert, Guthrie Center
Neglia, Fortunato, Maxwell
Neligh, Gordon L., Jr., Council Bluffs
Nelken, Leonard, Clinton
Nelson, Arnold L., Des Moines
Nelson, F. Lawrence, Ottumwa
Nelson, Leo C., Jefferson
Nelson, Norman B., Iowa City
Némec, Joseph J., Cedar Rapids
Nemmers, Gerald J., Washington
Nemmers, Julian G., Dubuque
Nessa, Curtis B., Burlington
Netolicky, Robert Y., Cedar Rapids
Neuzil, William J., Cedar Rapids (L.M.)
Newland, Don H., Belle Plaine
Newland, Donald O., Des Moines
Nicoll, Charles A., Panora
Nielsen, Arnold T., Ankeny
Nielsen, Glen E., Des Moines
Nielsen, Raymond M., Iowa City
Nielsen, Rudolph F., Cedar Falls
Nielsen, Arthur L., Council Bluffs
Nierling, Paul A., Cresco
Nitzke, Everett A., Des Moines
Niver, Edwin O., Clarinda
Noble, Nelle S., Des Moines (L.M.)
Noble, Rusl P., Alta
Nocella, Reynold A., Independence
Nolan, John C., Corning
Noonan, James J., Marshalltown
Nord, Donald H., Cambridge
Nordin, Charles A., Des Moines
Nordschow, Carleton D., Iowa City
Norris, Albert S., Iowa City
Norris, Lewis D., Newton
Northup, Maurice L., Humboldt
Norton, Robert E. G., Des Moines
Noun, Louis J., Des Moines
Noun, Maurice H., Des Moines
Noziska, Charles R., Council Bluffs
Nyquist, David M., Eldora

Ober, Frank G., Burlington
O'Brien, Lyal J., Fort Dodge
O'Brien, Stephen A., Mason City (L.M.)
O'Brien, Stephen A., Jr., Dubuque
O'Connor, Edwin C., New Hampton
O'Donnell, Joseph E., Clinton
Oelrich, Carl D., Sioux Center
Oestreicher, Harry, Independence
Oggel, Herman D., Waterloo (L.M.)
O'Keefe, Paul T., Waterloo
O'Leary, Francis B., Sibley
Olin, Elvin E., Dubuque
Olsen, Martin I., Des Moines (L.M.)
Olsen, Max E., Minden
Olsen, Ranald E., Milton
Olson, Evelyn M., Winterset
Olson, Stewart O., Des Moines
O'Neal, Harold E., Tipton
Onnen, Dale R., Newton
Orcutt, Paul E., Marion
Orelup, Don N., Albia
Ortiz, Rafael I., Des Moines
Ortmeyer, Donald W., Waterloo
Orton, Lawrence C., Mason City
Orvis, Roger C., Dubuque
Osborn, C. Robert, Dexter
Osincup, Paul W., Sioux City
Osten, Burdette H., Northwood
O'Toole, Laurence C., LeMars
Ottilie, Donald J., Oelwein
Otto, Paul C., Fort Dodge
Overton, Roy W., West Des Moines
Owca, Anthony S., Centerville
Owen, William E., St. Ansgar
Ozaydin, Ismail M., Council Bluffs

Packard, Douglas K., Dubuque
Page, Elizabeth B., Iowa City
Pahlas, Henry M., Dubuque
Paige, Ralph T., LaPorte City
Paine, Emory M., Mount Pleasant
Palmer, Carson W., Guttenberg (A.M.)
Palmer, Howard C., West Liberty
Palmer, Russell H., Postville
Palumbo, Louis T., Des Moines
Paragas, Modesto R., Creston
Parish, John R., Grinnell
Parke, John, Cedar Rapids
Parker, Loran F., Iowa Falls
Parker, Robert L., Des Moines (L.M.)
Parks, Claude O., Iowa City
Parks, John L., Muscatine
Parson, Victor G., Des Moines
Parsons, Earl, Burlington
Parsons, John C., Des Moines
Paschal, George A., Webster City
Pascoe, Paul L., Carroll
Pasterak, George E., Mount Pleasant
Patterson, John C., Independence
Patterson, Roy A., Webster City
Paul, John D., Anamosa
Paul, Richard E., Des Moines
Paul, William D., Iowa City
Paulsen, Donald A., Victor
Paulsen, Herbert B., Harris
Paulson, Jerome F., Mason City
Paulus, Edward W., Iowa City
Pearlman, Leo R., Des Moines
Pearson, George J., Burlington
Peart, John C., Davenport
Peasley, Harold R., Des Moines
Peddie, Harry M. K., Augusta, Maine
Pedersen, Arthur M., Council Bluffs
Pedersen, Paul D., Council Bluffs
Peggs, Harold J., Creston
Peisen, Conan J., Des Moines
Pelz, Werner P., Charles City
Penly, Don H., Cedar Falls
*Pennington, Orville J., Dexter (L.M.)
Perel, Ada R., Des Moines
Perkins, Franklin C., Hedrick
Perkins, Rollin M., II, Davenport
Perley, Arthur E., Waterloo
Perrin, William D., Sumner
Pester, George H., Council Bluff-
Peters, Earl E., Muscatine
Petersen, Donal C., Burlington
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
Petersen, Robert E., Dubuque
Petersen, Vernon W., Clinton
Peterson, Byron E., Mount Pleasant
Peterson, Charles R., Des Moines
Peterson, Elroy R., Ames
Peterson, Evan A., Burlington
Peterson, Frank R., Cedar Rapids
Peterson, John C., Hartley
Peterson, Loren G., Des Moines
Peterson, Ray W., Clear Lake
Peterson, Richard J., Panora
Pettipiece, Clayton, Sidney
Pfaff, Robert A., Dubuque
Pfeiffer, Donald W., Dubuque
Pfeiffer, Harry E., Riviera Beach, Fla. (L.M.)
Pfohl, Anthony C., Dubuque
Phelan, Mary Patricia, Altoona
Phelps, Gardner D., Waterloo
Phelps, Richard E. H., New Sharon
Pheteplace, Willard S., Davenport
Phillips, Albin B., Clear Lake (L.M.)
Phillips, Allan B., Des Moines
Phillips, Clarence P., Muscatine
Phillips, Walter B., Montezuma
Piburn, Marvin F., Des Moines
Piekenbrock, Frank J., Dubuque
Piekenbrock, Thomas C., Dubuque
Piercy, Kenneth C., Ames
Pierson, Lawrence E., Sioux City
Pietrzak, Julius, Cedar Rapids
Ping, Er Chang, Woodward
Pitcher, Arlo L., Belmond
Pitluck, Harry L., Laurens
Pittinger, Charles B., Iowa City
Plager, Vernon H., Waterloo
Plankers, Arthur G., Dubuque
Plott, Carol L., Algona
Poepsel, Frank L., West Point
Ponseti, Ignacio V., Iowa City
Poore, Samuel D., Villisca
Porter, Lawrence W., Indianola
Porter, Philip M., New Hampton
Porter, Richard C., Des Moines
Porter, Robert J., Des Moines
Porter, S. Dale, Grinnell
Posner, Edward R., Jr., Des Moines
Posner, Edward R., Des Moines (L.M.)
Potter, Paul H., Mason City
Powell, Adrian R., Elkader
Powell, Charles W., Cherokee
Powell, Lester D., Des Moines
Powell, Robert M., Mason City
Powell, William R., Des Moines
Powell, Robert V., Kingsley
Powers, George H., Shenandoah
Powers, Henry R., Emmetsburg
Powers, Ivan R., Waterloo
Powers, John L., Estherville
Preacher, Charles B., Davenport
Preece, Wade O., Waterloo
Prescott, Kenneth H., Storm Lake
Presnell, William H., Charlotte
Prewitt, Leland H., Ottumwa
Priestley, Joseph B., Des Moines
Proctor, Rothwell D., Cedar Rapids
Prouty, James V., Cedar Rapids
Province, William, Jr., Dubuque
Ptacek, Joseph L., Webster City
Pugh, Philip F. H., Sioux City
Pumphrey, Loira C., Keokuk
Puntenney, Andrew W., Boone
Purdy, William O., Des Moines

Quetsch, Richard M., Cedar Rapids

Radcliffe, Christian E., Iowa City
Radicia, Lucy M., Council Bluffs
Rahn, Gordon E., Mount Vernon
Rainy, Curtis W., Elma
Ralston, Furman, Knoxville
Ramsdell, Stuart T., Clarinda
Randall, Ross G., Waterloo
Randall, William L., Hampton
Randolph, Aaron P., Anamosa
Rankin, Isom A., Iowa City
Rankin, John R., Keokuk
Rankin, William, Keokuk (L.M.)
Rater, David L., Ottumwa
Rathe, Herbert W., Waverly
Rathe, James W., Waverly
Rausch, Gerald R., Sioux City
Ravreby, Mark D., Des Moines
Read, Charles H., Iowa City
Reading, Donald S., Marshalltown
Readinger, Harry M., New London
Redfield, Earl L., Des Moines
Redmond, James J., Cedar Rapids
Reed, Robert J., Des Moines
Reeder, James E., Sioux City (L.M.)
Reeder, James E., Jr., Sioux City
Reedholm, Edwin A., Grundy Center
Reeds, Ralph E., St. Paul, Minn.
Reibold, Frank W., Carroll
Reimers, Robert S., Fort Madison (L.M.)

Rembolt, Raymond R., Iowa City
Rence, William G., Mason City
Resinger, Harold E., Des Moines
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
Rhodes, John M., Pocahontas
Rice, Floyd W., Des Moines (L.M.)
Richard, Clysta A., Des Moines
Richardson, Francis H., Council Bluffs
Richey, Granville L., Centerville
Richmond, Arthur C., Fort Madison
Richmond, Frank R., Fort Madison
Richmond, Frank R., Jr., Fort Madison
Richmond, Paul C., New Hampton
Richter, Harold J., Albia
Rider, Harmon E., Philadelphia, Pa.
Ridenour, Edward J., Waterloo
Riegelman, Ralph H., Des Moines
Rieniets, John H., Cedar Rapids
Riggert, Leonard O., San Diego, Calif.
Rimel, George W., Bedford
Rindskopf, Wallace, Des Moines
Ritter, Eugene F., Centerville
Ritter, John A., Ottumwa
Robb, William J., Cedar Rapids
Roberts, C. Ronald, Dysart
Roberts, Francis M., Knoxville (L.M.)
Roberts, Justus B., Ottumwa
Robertson, Treadwell A., West Liberty
Robinson, Beverly, Des Moines
Robinson, Ray G., State Center
Robinson, Van C., Des Moines
Robison, Harry V., Sioux City
Rock, J. Gordon, Davenport
Rock, John E., Davenport
Rock, William K., Waterloo
Rockwell, Maryelda, Clinton
Rodabaugh, Kenneth D., Tabor
Rodawig, Don F., Spirit Lake
Rodawig, Don F., Jr., Spirit Lake
Roddy, Harold J., Mason City
*Rodemeyer, Frederick H., Sheffield (L.M.)
Rogers, Claude B., Earlville (L.M.)
Rohlf, Edward L., Jr., Waterloo
Rohrbacher, William M., Iowa City
Rohwer, Roland T., Sioux City
Rolfs, Floyd O., Parkersburg
Rolfs, Fred A., Aplington
Romano, Anthony M., Minden
Romero, José M., Des Moines
Rominger, Clark R., Waukon
Rominger, Clark W., Waukon (L.M.)
Rooney, Joseph M., Algona
Rose, Alvin A., Story City (L.M.)
Rose, Joseph E., Grundy Center
Rosebrook, Lee E., Ames
Rosendorff, Charlotte, Davenport
Ross, Arthur J., Jr., Perry
Rost, Glenn S., Lake City
Rotkow, Maurice J., Des Moines
Roudybush, William B., Muscatine
Roules, J. Frederic, Mediapolis
Rovine, Byron W., Davenport
Rowan, Theodore, Des Moines
Rowley, Robert D., Burlington
Rowley, William G., Sioux City (L.M.)
Rowney, George W., Sioux City
Royal, Lester A., West Liberty (L.M.)
Royal, Malcolm A., Des Moines (L.M.)
Rozeboom, Earl G., Winterset
Rudersdorf, Howard E., Sioux City
Rusk, Ross P., Dubuque
Russell, Elwood P., Burlington
Russell, John, Santa Barbara, Calif. (L.M.)
Russell, Ralph E., Waterloo
Rust, Emery A., Webb (L.M.)
Ruth, Verl A., Des Moines
Ryan, Allen J., Harlan
Ryan, Cyril J., Bettendorf
Ryan, James W., Jr., Des Moines
Ryan, Robert A., Fairfield

Saar, Jesse L., Donnellson
Saar, Jesse L., Jr., Burlington
Saar, John W., Keokuk
Safley, Max W., Forest City
Sahs, Adolph L., Iowa City
Sampson, Carl E., Creston
Samter, Bernhard, Mount Pleasant
Sand, Bernard F., Waterloo
Sanders, Donald C., Independence
Sanders, George E., Miami, Fla. (L.M.)
Sanders, Matthew G., Fort Dodge
Sanders, W. E., Tucson, Ariz. (L.M.)
Sands, Sidney L., Des Moines
Sands, W. Wayne, Des Moines
Sarff, Floyd G., Logan
Sartor, Guido J., Mason City
Satrang, Geraldine, Sioux City
Sattler, Dwight G., Kalona
Sauer, Harold E., Marshalltown
Saul, F. William, Mason City
Sautter, Richard D., Iowa City
Sautter, Robert A., Mount Vernon
Sawyer, Grace M., Woodward
Sawyer, Thomas R., Cedar Rapids
Scanlan, George C., Clinton
Scanlon, George H., Iowa City
Schacht, Norman A., Fort Dodge
Schaefer, Paul H., University City, Mo. (L.M.)
Schaeferle, Lawrence G., Gladbrook
Schaeferle, Martin J., Eagle Grove
Schafer, Leander H., DeWitt
Schaffner, Rome L., Cedar Rapids
Scharle, Theodore, Dubuque
Schedl, Harold P., Iowa City
Scheffel, Melvin L., Malvern
Scheibe, John R., Bloomfield
Schill, Austin E., Des Moines
Schissel, Donald, Des Moines
Schlaser, Verne L., Des Moines
Schlichtemeier, Ellis O., Spencer
Schmidhofer, Ernst, Jamestown, N. D.
Schmiedel, Edward E., Charles City
Schmit, Germain L., Cedar Rapids
Schmitt, Donald D., Ringsted
Schnug, George E., Dows (L.M.)
Scholl, Charles R., Cedar Rapids
Schoonover, Richard, Bloomfield
Schrier, Harold L., Fort Madison
Schrock, Christian E., Iowa City
Schroeder, Adrian J., Marshalltown
Schroeder, Leslie V., Walcott
Schropp, Rutledge C., Des Moines
Schueller, Charles J., Dubuque
Schultz, Gerald T., Iowa City
Schultz, Ivan T., Humboldt
Schultz, Nelle E. T., Humboldt
Schumacher, Donald R., Clinton
Schupp, Joseph G., Jr., Des Moines
Schutter, John M., Algona
Schwartz, Charles, Cedar Rapids
Schwartz, John W., Sioux City
Sciortino, Aileen Mathiasen, Council Bluffs
Sciortino, Arthur L., Council Bluffs
Scott, Paul W., Ottumwa
Scott, Phillip A., Spirit Lake
Scoville, Victor T., Sioux City
Sear, John, Alden
Sebek, Roy O., Fort Dodge
Sedlacek, Leo B., Cedar Rapids
Sedlacek, Richard L., Cedar Rapids
Sedlacek, Robert A., Cedar Rapids
Seebohm, Paul M., Iowa City
Seely, Harmon D., Cherokee
Seibert, Cecil W., Waterloo
Seibert, Virgil E., Mason City
Seidler, William A., Jr., Jamaica
Sells, Benjamin B., Independence (L.M.)
Selo, Rudolph A., Council Bluffs
Senft, Otto E., Monticello
Sensenig, David M., Iowa City
Senska, Frank R., Iowa City (A.M.)
Senty, Elmer G., Davenport
Severson, George J., Slater (L.M.)
Severson, Wayne L., Slater
Shafer, Arthur W., Davenport
Shagass, Charles, Iowa City
Shank, Raymond A., Cedar Rapids
Sharpe, Donald C., Dubuque
Shaw, David F., Britt
Shaw, Robert E., Waverly
Shea, Thomas E., Storm Lake
Sheehan, Daniel J., Cherokee
Sheeler, Ivan H., Marshalltown
Sheets, Raymond F., Iowa City
Sheller, Tom G., Independence
*Shelton, Charles D., Bloomfield (L.M.)
Shepherd, Loyd K., Des Moines
Sherman, Richard C., Los Angeles, Calif. (L.M.)
Sherman, Robert B., McKinney, Texas
Shiffler, H. Kirby, Des Moines
Shinkle, William C., Des Moines
Shohet, Isaac H., Bode
Shope, Charles D., Greenfield
Shorey, Joseph R., Davenport
Shreffler, James L., Waterloo
Shulman, Herbert, Waterloo
Shultz, William T., Marshalltown
Shurts, John J., Eldora
Sibley, Edward H., Sioux City
Sibley, John A., Ames
Silk, Marvin, Des Moines
Simpson, Roger A., Iowa City
Simmons, Ralph R., Des Moines (A.M.)
Singer, John R., Newton
Singer, Siegmund F., Ottumwa
Sinn, Irvin J., Williamsburg
Sinning, John E., Marshalltown
Sisk, James A., Waterloo
Sitz, Edward J., Davenport
Skallerup, Glenn M., Red Oak
Skelley, Paul B., Jr., Dubuque
Skopec, Francis M., Cedar Rapids
Skultety, F. Miles, Iowa City
Skultety, James A., Des Moines
Sloan, Morris G., Boone
Sloan, Fred R., Waterloo
Sloan, Frederic J., Cedar Rapids
Sloan, Roy C., Mount Pleasant
Sloterdyk, Yme, Knoxville
Smazal, Stanley F., Davenport
Smead, Leslie L., Newton (L.M.)
Smiley, George W., Ottumwa
Smiley, Ralph E., Mason City
Smith, Alfred N., Des Moines
Smith, Andrew C., Waterloo
Smith, Andrew D., Primghar
Smith, Anthony P., Hubbard
Smith, Cecil R., Wyoming
Smith, Clyde J., Gilmore City
Smith, Elmer M., Eagle Grove
Smith, Eugene, Waterloo
Smith, Herman J., Des Moines
Smith, Ian M., Iowa City
Smith, J. Lawrence, Ames
Smith, James W., Iowa City
Smith, J. Ned, Iowa City
Smith, Jeanne Montgomery, Iowa City
Smith, John E., Clarence (L.M.)
Smith, Lawrence D., Des Moines
Smith, Richard T., Davenport
Smith, Richard W., Clarion
Smith, Robert A., Albia
Smith, Robert J., Stacyville
Smith, Robert T., Granger
Smith, Rodger B., Mason City
Smith, S. Rodmond, Red Oak
Smith, Sidney A., Oskaloosa
Smrha, James A., Cedar Rapids
Smythe, Arnold M., Des Moines
Snyder, Gregg M., Ottumwa
Snyder, Raleigh R., Des Moines (L.M.)
Socarras, Alfredo, Des Moines
Sohm, Herbert A., Des Moines
Soiseth, Robert P., Iowa City
Sokol, Charles R., State Center
Sones, Clement A., Des Moines
Soper, Robert T., Iowa City
Sorensen, Elmer M., Red Oak
Sorenson, Aral C., Davenport
Sorenson, Kermit R., Sabula
Southwick, William W., Marshalltown
Spear, William, Oakdale
Spearing, Joseph H., Harlan
Speers, James F., Des Moines
Spellman, George G., Sioux City
Spencer, John H., Muscatine
Spencer, William A., Osage
Sperry, Frederick S., Clarinda
Spevak, Jack J., Des Moines
Spilman, Harold A., Ottumwa
Spohnheimer, L. Nelson, Leon
Springer, Floyd A., Des Moines
Sprowell, Robert R., Ames
Stamler, Frederic W., Iowa City
Stansbury, John E., Santa Barbara, Calif. (A.M.)
Staples, Lawrence F., Des Moines
Stark, Callistus H., Cedar Rapids
Stark, Frederick M., Sioux City
Starr, Charles F., Mason City (L.M.)
Starry, Allen C., Sioux City (A.M.)
Stauch, Martin O., Moorhead
Stauch, Omar A., Sioux City
Steenrod, Emerson J., Iowa Falls
Steffens, Lincoln F., Dubuque
Steffey, Fred L., Keokuk
Stegmen, Jacob J., Marshalltown
Stephen, Paul, Cedar Rapids
Stephen, Raymond J., Cedar Rapids
Stephens, Ralph R., Des Moines
Stepp, James K., Manchester (L.M.)
Sternagel, Fred, West Des Moines
Sternberg, Walter A., Corona Del Mar, Calif. (L.M.)
Sternhill, Isaac, Council Bluffs
Stevens, Clark W., Dubuque
Steves, Richard J., Des Moines
Stewart, John H., Ottumwa
Stewart, John K., Clinton
Stickler, Robert B., Des Moines
Stimac, Emil M., Davenport
Stinard, Charles D., Glenwood
Stinson, Alice C., Estherville (L.M.)
Stitt, Paul L., Fort Dodge
Stoakes, Charles S., Lime Springs (L.M.)
Stockdale, John C., Burlington
Stoikovic, Joseph P., Burlington
Stone, Daniel B., Iowa City
Storck, Robert D., Dubuque
Strand, Clarence M., Dubuque

Strathman, Lawrence C., Shenandoah
Stratman, Clarence A., Sac City
Straub, Joseph J., Dubuque
Straumanis, Janis, Solon
Strawn, John T., Vinton (L.M.)
Strong, Kirk H., Fairfield
Stroy, Donald T., Council Bluffs
Stroy, Herbert E., Osceola
Stuart, Percy E., Nashua (L.M.)
Stueland, Alvin J, R., Mason City
Stuelke, Richard G., West Branch
Stumme, Ernest H., Denver
Stumme, Luther P., Denver
Sullivan, Daniel J., Marshalltown
Sullivan, John E., Des Moines
Sullivan, John V., Carroll
Sulzbach, John F., Burlington
Summers, Thomas B., Des Moines
Sun, Kuei shu, Ames
Sunderbruch, John H., Davenport
Sunner, Gerald C., Marion
Sutton, Gerald H., Jr., Boone
★Sutton, James C., Boone
Svendsen, Reinert N., Keokuk
Swanson, Eric M., Fort Dodge
Swanson, Gerald W., Lamoni
Swanson, Keith R., Hull
Swanson, Leslie W., Mason City
Swayze, V. Warren, Muscatine
Sweeney, Lloyd J., Sanborn
Swift, Frederick J., Jr., Maquoketa
Swift, Frederick J., Sr., Maquoketa (L.M.)
Synhorst, John B., Des Moines (A.M.)
Sywassink, George A., Muscatine

Tabor, James R., Iowa City
Tait, John H., Des Moines
Tamisiea, Francis X., Missouri Valley
Taylor, Charles B., Claremont, Calif. (L.M.)
Taylor, Donald E., Stuart
Taylor, James H., Clinton
Taylor, Lawrence A., Ottumwa
Taylor, Maude, Ottumwa (L.M.)
Taylor, Robert S., Davenport
Taylor, Wendel W., Sheffield
Teigland, Joel D., Des Moines
Telfer, William L., Waterloo
Teufel, John C., Davenport (L.M.)
Thaler, David, Cedar Rapids
Thatcher, Wilbur C., Fort Dodge
Theilen, Ernest O., Iowa City
Theisen, Roy I., Dubuque
Thielen, Edward W., Waterloo
Thielen, John B., Fonda
Thoman, William S., Sioux City
Thomas, Clyde E., Keystone
Thomas, Colin G., Monticello
Thomas, James H., Sibley
Thompson, Elvin D., Jefferson
Thompson, Howard E., Dubuque (L.M.)
Thompson, James R., Waterloo (L.M.)
Thompson, Kenneth L., Oakland
Thompson, Virginia D., Des Moines
Thomsen, John G., Des Moines
Thorburn, Oral L., Ames
Thornbury, John R., Iowa City
Thornton, F. Eberle, Des Moines
Thornton, John W., Lansing
Thornton, Thomas F., Waterloo
Thornton, Thomas F., Jr., Waterloo
Thorson, John A., Dubuque
Throckmorton, J. Fred, Des Moines
Throckmorton, Jeannette Dean, Des Moines (L.M.)
Throckmorton, Scott L., Chariton
Throckmorton, Tom B., Des Moines (L.M.)
Throckmorton, Tom D., Des Moines
Tice, Claude B., Mason City (L.M.)
Tice, George I., Mason City
Tice, W. Arnold, Waterloo
Tidrick, Robert T., Iowa City
Tiedeman, John P., Sioux City
Tierney, Edmund J., Sioux City
Tierney, James M., Carroll
Todd, Donald W., Guthrie Center
Todd, Robert L., Burlington
Tolliver, Hillard A., Charles City
Top, Franklin H., Iowa City
Toubes, Abraham A., Des Moines
TouVelle, Alwyn R., Bettendorf
Towle, Robert A., Davenport
Tracy, John S., Sioux City
Trafton, Harold F., Council Bluffs
Traister, John E., Eddyville (L.M.)
Trefz, Donald L., Nashua
Trey, Bernard L., Marshalltown
Treynor, Jack V., Council Bluffs
Trier, Paul J., Des Moines
Tripp, Richard C., Fort Dodge
Trotzig, Joseph P., Akron
Troxel, John F., Cedar Rapids
Troxell, Millard A., Cedar Rapids
Truebood, Clare A., Indianola
Trumpe, William D., Cedar Rapids
Trunnell, Thomas L., Waterloo
Turner, Howard V., Des Moines
Turner, James H., Fairfield
Turner, Rosalie C., Nashua
Turner, Roy M., Armstrong
Tyler, Donald E., Fort Dodge
Tyrrell, John E., Manchester

Uchiyama, John K., Des Moines
Underriner, Robert E., Holstein
Updegraff, Charles L., Boone
Updegraff, Robert R., Des Moines
Updegraff, Thomas R., Waterloo
Urich, Vernon C., Flint, Mich.
Utne, John R., Mason City

Valiquette, Frank G., Sioux City
Van Allen, Maurice W., Iowa City
Van Bemmel, Piet F., Ames
Van Camp, Thomas H., Breda
Vender Stoep, Harry L., LeMars
Van Epps, Clarence E., Phoenix, Arizona (L.M.)
Van Epps, Eugene F., Iowa City
Vangeness, Ingmar U., Sioux City (A.M.)
Van Metre, Paul W., Rockwell City (L.M.)
Van Natta, Carlton W., West Des Moines
Vannix, George L., Santa Barbara, Calif.
Van Patten, Ernest M., Fort Dodge
*Van Tiger, William H., Eldora (A.M.)
Van Werden, Benjamin D., Keokuk
Van Wetsinga, Russel J., Bettendorf
Van Zante, Peter, Pella
Van Zee, Gene K., Pella
Vaubel, Ellis K., Estherville
Vaughan, William R., New London
Vaughn, Vincent J., Ottumwa
Vegars, Stanley H., Mason City
Veley, Robert W., Cedar Rapids
Vercio, Raymond A., Burlington
Vernon, Robert G., Dubuque
Victorine, Edward M., Cedar Rapids
Viner, Thomas R., Leon
Vineyard, Thomas L., Ottumwa
Voigt, Ernest J., Burlington (A.M.)
Voigt, Franz O. W., Oskaloosa
von Lackum, J. Kenneth, Cedar Rapids
Vorhes, Carl E., Sheldon
Vorisek, Elmer A., Des Moines
Vosika, Edward J., Washington
Voss, Otto R., Davenport (L.M.)

Waggoner, Charles V., Clinton
Wagner, Donald J., Sioux City
Wagner, Eugene C., Plainfield
Wahrer, Frederick L., Marshalltown
Wainwright, Max T., Sioux City
Waldorf, Richard D., Waterloo
Walker, Charles C., Des Moines (L.M.)
Walker, Glenn L., Burlington
Walker, John R., Waterloo
Walker, Thomas G., Riceville
Walker, Thomas S., Riceville (L.M.)
Wall, David, Ames
Wall, John M., Boone
Wallace, Leo F., Burlington
Wallace, William E., Cedar Rapids
★Walsh, E. L., Huntington, West Virginia
Walsh, William E., West Union
Walston, Edwin B., Des Moines (L.M.)
Walston, James H., Sioux City
Walter, Dennis J., Des Moines
Walton, Seth G., Hampton
Wanamaker, A. Roy, Hamburg
Ward, Donovan F., Dubuque
Ward, Loraine W., Oelwein
Warden, Duane D., Council Bluffs
Ware, John, Mt. Vernon
Ware, Stephen C., St. Petersburg, Fla.
Ware, Thomas A., Sioux City
Warner, Emory D., Iowa City
Warner, Paul L., Wesley
Waste, Richard L., Williamsburg
Waterbury, Charles A., Jr., Waterloo
Watson, Charles F., Fairfield
Watt, Russell H., Marshalltown
Watters, George H., Des Moines
Watts, A. Fred, Creston
Watts, Campbell F., Cedar Rapids
Watts, Clyde F., Marengo
Watzke, Robert C., Iowa City
Weaver, David F., Davenport
Weaver, Kenneth H., Union
*Weaver, Ralph L., Cumberland
Webb, Daniel R., Oakdale
Webb, James B., Ottumwa
Weber, Frank N., Walnut
Weber, Leslie E., Jr., Wapello
Weber, Wm. W., Pomeroy
Weems, Nev E., Paullina
Weideman, Don C., Vinton
Weih, Elmer P., Clinton
Weinberg, Harry B., Davenport
Weingart, Julius S., Des Moines (L.M.)
*Weis, Howard A., Davenport
Weland, Regis E., Cedar Rapids
Wellman, Thomas G., Clinton
Wells, Rodney C., Marshalltown
Wellso, Charles G., Cedar Rapids
Wentworth, Laydon S., Marble Rock
Wentzien, Albert J., Tama
Weresh, John D., Atlantic
Werner, Harold T., Fort Madison
Wessels, William R., Marshalltown
West, Alroy G., Council Bluffs
West, Norman D., Avoca
*West, Walter E., Centerville (L.M.)
Westly, G. Travis, Mason City
Westly, John S., Mason City
Weston, B. Raymond, Mason City
Weston, Robert A., Des Moines (L.M.)
Wetrich, Max F., Grand Junction
Wettach, Robert S., Mount Pleasant
Weyhrauch, Robert A., Waterloo
Weyer, Joseph J., Fort Dodge
Wheeler, Edward R., Muscatine
Wheeler, Richard A., Des Moines
Whitaker, Ben T., Boone
White, Charles E., Independence
White, George H., Des Moines
White, Newton B., Hampton
Whitehouse, William K., Ottumwa
Whitehouse, William N., Ottumwa
Whitley, Ralph L., Osage (L.M.)
Whitmer, Lysle H., Muscatine (A.M.)
Whitmire, James E., Sumner
Wichern, Homer E., Des Moines
Wicklund, Maurice M., Waterloo
Wicks, Ralph L., Boone
Widmer, James G., Wayland
Widmer, Reuben B., Winfield
Wiedemeier, Joseph L., Sioux City
Wiemers, Eugene L., Cherokee
Wigdahl, Lowell C., Emmetsburg
Wilcox, Delano, Malcom (L.M.)
Wilcox, Dwain E., Atlantic
Wilcox, Edgar B., Oskaloosa (L.M.)
Wilcox, Keith E., Muscatine
Wilcox, Kenneth M., Fort Dodge
Wilcox, Robert A., Iowa City
Wildberger, William C., Perry
Wilhelmi, Raymond W., Sioux City
Wiley, Alden F., Waukon
Wilke, Frank A., Perry
Wilker, Richard F., Creston
Willett, Wilton J., Manchester
Williams, Lawrence B., Maquoketa
Williams M. Neil, Des Moines
Williams, Thomas L., Cherokee
Williamson, Billy J., Keokuk
Wilson, Charles R., Manson
Wilson, F. Dale, Davenport
Wilson Fredric L., Sioux City
Wilson, Fredric W., Sioux City
Wilson, Roy E., Iowa City
Wilson, Robert G., Missouri Valley
Wilson, William R., Baltimore, Maryland
Winder, Clifford D., Waterloo
Winninger, Louis T., Waterloo
Winter, F. Donald, Burlington
Wirtz, Dwight C., Des Moines
Wise, Arthur C., Iowa City
Wise, James H., Cherokee
Wise, James K., Jr., Cherokee
Wohlwend, Edward B., Iowa City
*Wolcott, Ruth F., Spirit Lake,
Wolf, Henry H., Elgin
Wolf, William J., West Union
Wolfe, Otis D., Marshalltown
Wolfe, Russell M., Marshalltown
Wolfe, Wilson C., Ottumwa
Wolff, Hugh L., Iowa City
Wolpert, Paul L., Onawa
Wolters, Donald E., Estherville
Wolverton, Benjamin F., Cedar Rapids
Wood, Hobart R., Ottumwa
Wood, Richard A., Peterson
Woodard, Ralph E., Fort Dodge
Woodburn, Chester C., Jr., Des Moines
Woodhouse, Keith W., Cedar Rapids
Woodward, Arthur W., Waterloo
Wooters, Richard C., Des Moines
Wormhoudt, Herbert L., Ottumwa
Worrell, James T., Keosauqua
Worthington, John J., Cherokee
Wray, Clarence M., Iowa Falls (L.M.)
Wray, Robert M., Cedar Rapids

Wright, David W., Decorah
Wright, Thomas D., Newton
Wright, Thomas G., Marion
Wubbena, Arthur C., Rock Rapids
Wuest, Curtis G., Amana
Wurtzer, Ezra L., Clear Lake (A.M.)
Wyatt, George M., Iowa City
Wykoff, Sarah U., Des Moines

Yein, Chung Sung, Waterloo
Yetter, William L., Iowa City
Yocom, Albert L., Chariton (L.M.)
York, Dallas L., Creston
Young, Donald C., Des Moines
Young, Ernest R., Dubuque (L.M.)
Young, George G., Des Moines
Young, Howard O., Marion (L.M.)
Young, James J., Clinton
Young, Richard A., Clarion
Yugend, Sidney F., Indianola

Zabloudil, Warren C., Burlinton
Zabloudil, Warren C., Burlington
Zaharis, George M., Des Moines
Zehr, Earl E., Guttenberg
Zelinskas, Leonard P., Dubuque
Zellweger, Hans, Iowa City
Zibilich, George J., Lone Tree
Ziebell, William C., Iowa City
Ziffren, Sidney E., Des Moines (L.M.)
Zimmerman, George R., Iowa City
Zimmerer, Edmund G., Des Moines (L.M.)
Zoeckler, Samuel J., Des Moines
Zoutendam, Ronald L., Sheldon
Zukerman, Cecil M., Davenport

*Deceased
★Military Service
(L.M.) Life Member
(A.M.) Associate Member

FIFTY YEAR CLUB MEMBERS

JUNE 15, 1961

Acher, Albert E. ..... Fort Dodge

Baldwin, Leon A ..... Riverton
Barr, Guy E. ..... Sioux City
Bartlett, George E. ..... New Sharon
Behrens, George W. ..... Davenport
Bell, Edward P. ..... Pleasantville
Bernard, Ransom D. ..... Ames
Bierring, Walter L. ..... Des Moines
Boice, Clyde A. ..... Washington
Boiler, William F. ..... Iowa City
Bowers, Arthur S. ..... Orient
Bowie, Louis L. ..... Zearing
Bruce, James H. ..... Fort Dodge
Bullock, William E. ..... Lake Park
Burbank, Dean S. ..... Pleasantville
Burcham, Thomas A. ..... Des Moines

Cantwell, John D. ..... Davenport
Carlile, Amos W. ..... Manning
Carson, Andros ..... Des Moines
Chase, William B., Sr. ..... Des Moines
Chittum, John H. ..... Wapello
Clasen, Henry W. ..... Littleton, Colorado
Closson, Charles L. ..... Walker
Cody, William E. ..... Sioux City
Cole, Elmer J. ..... Woodbine
Conmey, Roy M. ..... Sergeant Bluff
Cooper, Gladys A. ..... Lansing, Mich.
Cooper, Jay C. ..... Villisca
Cressler, Frank E. ..... Churdan
Cretzmeyer, Francis X. ..... Emmetsburg
Crew, Arthur E. ..... Marion
Crow, George B. ..... Burlington

Day, Philip M. ..... Oskaloosa
Dean, William F. ..... Osceola
Decker, Jay C. ..... Sioux City
Ditto, Boyd L. ..... Burlington
Dolmage, George F. ..... Buffalo Center
Dorsey, Thomas J. ..... Fort Dodge
Downing, Leroy M. ..... Cedar Rapids
Dulin, Tarana J. G. ..... Iowa City

Ennis, Harry H. ..... Manchester

Foulk, Frank E. ..... Backus, Minn.
French, Royal F. ..... Marshalltown

Gardner, John R. ..... Lisbon
Gearhart, George W. ..... Springville
Goodenow, Sidney B. ..... Colo
Gray, John F. ..... Melcher
Gutch, Roy C. ..... Chariton

Hamilton, Benjamin F. ..... Jefferson
Hansen, Robert R. ..... Marshalltown
Harken, Conreid R. ..... Osceola
Harkness, Gordon F. ..... Davenport
Harrington, Burton ..... Cedar Rapids
Harris, Ray R. ..... Dubuque
Hennessy, Felix A. ..... Calmar
Hickenlooper, Carl B. ..... Winterset
Hickman, Charles S. ..... Centerville
Hill, James W. ..... Mount Ayr
Hoffman, Paul M. ..... Tipton
Hollis, Edward L. ..... Marengo
Houser, Cass T. ..... Cedar Rapids
Housholder, Harold A. ..... Winthrop
Howell, Elias B. ..... Ottumwa
Hudek, Joseph W. ..... Garnavillo

Ihle, Charles W. ..... Cleghorn

Jackson, James M. ..... Jefferson
Jaenicke, Kurt ..... Clinton
James, Lora D. ..... Fairfield
James, Peter E. ..... Audubon
Janse, Phillip V. ..... Algona
Jarvis, Harry D. ..... Chariton
Jenkins, George A. ..... Albia
Johnson, Amos F. ..... Florence, Nebraska
Jones, Charles L. ..... Gilmore City
Jones, Harry J. ..... Cedar Rapids
Joynt, Michael F. ..... Marcus

Kahler, Hugo V. ..... Reinbeck
Keech, Roy F. ..... Cedar Rapids
Keeney, George H. ..... Mallard
Kennedy, Elizabeth Smith ..... Oelwein
Kern, Lester C. ..... Waverly
Keyser, Ralph E. ..... Marshalltown
Kimball, John E. ..... West Liberty
Kyle, William S. ..... Washington

Loes, Anthony M. ..... Dubuque
Losh, Clifford W. ..... Des Moines
Luke, Edward ..... Washington, D. C.

McCall, John H. ..... Allerton
McClean, Earl D. ..... Des Moines
McDowall, Gilbert T. ..... Gladbrook
McFarland, Guy E., Sr. ..... Ames
McHugh, Charles P. ..... Sioux City

Magee, Emery E. ..... Waterloo
Maplethorpe, Charles W., Sr. ..... Toledo
Martin, Sidney D. ..... Carroll
Matthey, Walter A. ..... Bettendorf
Merritt, Arthur M. ..... Des Moines
Meyers, Frank W. ..... Dubuque
Miller, Enos D. ..... Wellman
Mitchell, Claire H. ..... Cincinnati
Murray, Frederick G. ..... Cedar Rapids

Neal, Emma J. ..... Cedar Rapids
Neuzil, William J. ..... Cedar Rapids

O'Brien, Stephen A. ..... Mason City
Oggel, Herman D. ..... Waterloo
Olsen, Martin I. ..... Des Moines

Parker, Robert L. ..... Des Moines
Pfeiffer, Harry E. ..... Riviera Beach, Fla.
Phillips, Albin B., Sr. ..... Clear Lake
Posner, Edward R. ..... Des Moines

Rankin, William ..... Keokuk
Reeder, James E., Sr. ..... Sioux City
Reimers, Robert S. ..... Fort Madison
Rogers, Claude B. ..... Earlville
Rominger, Clark W. ..... Waukon
Rose, Alvin A. ..... Story City
Rowley, William G. ..... Sioux City
Royal, Lester A. ..... West Liberty
Royal, Malcolm A. ..... Des Moines
Rust, Emery A. ..... Webb

Saunders, William E. ..... Tucson, Ariz.
Schnug, George E. ..... Dows
Sells, Benjamin B. ..... Independence

Severson, George J. ..... Slater
Smead, Leslie L. ..... Newton
Smith, John E. ..... Clarence
Snyder, Raleigh R. ..... Des Moines
Stepp, James K. ..... Manchester
Sternberg, Walter A. ..... Corona Del Mar, Calif.
Stinson, Alice C. ..... Estherville
Stoakes, Charles S. ..... Lime Springs
Stuart, Percy E. ..... Nashua

Taylor, Maude ..... Ottumwa
Teufel, John C. ..... Davenport
Throckmorton, Jeannette Dean ..... Des Moines
Throckmorton, Tom B. ..... Des Moines
Traister, John E. ..... Eddyville

Van Epps, Clarence E. ..... Phoenix, Ariz.
Van Metre, Paul W. ..... Rockwell City
Voss, Otto R. ..... Davenport

Walker, Charles C. ..... Des Moines
Walker, Thomas S. ..... Riceville
Walston, Edwin B. ..... Des Moines
Weingart, Julius S. ..... Des Moines
Westenberger, Joseph C. ..... St. Ansgar
Weston, Robert A. ..... Des Moines
Whitley, Ralph L. ..... Osage
Wilcox, Edgar B. ..... Oskaloosa
Wray, Clarence M. ..... Iowa Falls

Yocom, Albert L. ..... Chariton
Young, Ernest R. ..... Dubuque
Young, Howard O. ..... Cedar Rapids

Zimmerer, Edmund G. ..... Des Moines

Membership Roster of the Woman's Auxiliary To the Iowa Medical Society

Membership in Good Standing as of June 15, 1961

ALLAMAKEE COUNTY

Postville

Kiesau, Mrs. M. F.
Myers, Mrs. J. W.
Palmer, Mrs. R. H.

Waukon

Rominger, Mrs. C. R.

APPANOOSE COUNTY

Centerville

Brummitt, Mrs. C. F.
Edwards, Mrs. R. R.
Larsen, Mrs. E. A.
Leffert, Mrs. F. B.
Owca, Mrs. A. S.
Richey, Mrs. G. L.

BLACKHAWK COUNTY

Cedar Falls

Bairnson, Mrs. G. A.
Barnett, Mrs. S. W.
Ceilly, Mrs. W. H.
Hansen, Mrs. D. M.
Hearst, Mrs. G. H.
Heine, Mrs. G. W.
Henderson, Mrs. J. L.
Henn, Mrs. S. C.
Jeffries, Mrs. J. H.
McCoy, Mrs. J. T.
Nielsen, Mrs. R. F.
Penly, Mrs. D. H.
Thierman, Mrs. E. J.

Evansdale

Dolan, Mrs. A. M.

LaPorte City

Jauch, Mrs. Karl
Paige, Mrs. R. T.

Waterloo

Acker, Mrs. R. D.
Acker, Mrs. W. H.
Addison, Mrs. C. P.
Bailey, Mrs. R. O.
Baker, Mrs. G. H.
Barga, Mrs. J. L.
Barrett, Mrs. S. A.
Bender, Mrs. H. A.
Bickley, Mrs. D. W.
Blanchard, Mrs. R. W.
Board, Mrs. T. P.
Boller, Mrs. G. C.
Buckles, Mrs. R. D.
Butts, Mrs. J. H.
Cannon, Mrs. W. M.
Cooper, Mrs. C. N.
Corton, Mrs. R. V.
Devine, Mrs. A. W.
Diamond, Mrs. Bernard
Dick, Mrs. Fred, Jr.
Dieckmann, Mrs. M. R.
Drier, Mrs. W. C.
Driver, Mrs. R. W.
Ellyson, Mrs. C. D.
Entz, Mrs. F. H.
Gerard, Mrs. R. S.
Gerken, Mrs. J. F.
Goldberg, Mrs. Jacob
Hanson, Mrs. C. A.
Harned, Mrs. L. B.
Hartman, Mrs. H. J.
Hastings, Mrs. P. R.
Hoover, Mrs. R. S.
Kruse, Mrs. R. F.
Lanich, Mrs. O. K.
Loomis, Mrs. F. G.
Ludwig, Mrs. C. J.
Marquis, Mrs. F. M.
Mikelson, Mrs. C. J.
Miller, Mrs. R. C.
Miller, Mrs. R. L.
Mitchell, Mrs. R. C.
Morrison, Mrs. R. E.
Murphy, Mrs. G. C.
O'Keefe, Mrs. P. T.
Ortmeyer, Mrs. D. W.
Perley, Mrs. A. E.
Phelps, Mrs. G. D.
Plager, Mrs. V. H.
Preece, Mrs. W. O.
Randall, Mrs. R. G.
Reuling, Mrs. F. H.
Rock, Mrs. W. K.
Rohlf, Mrs. E. L., Jr.
Seibert, Mrs. C. W.
Shreffler, Mrs. J. L.
Shulman, Mrs. Herbert
Sisk, Mrs. J. A.
Sloan, Mrs. F. R.
Smith, Mrs. A. C.
Smith, Mrs. Eugene
Telfer, Mrs. W. L.
Thielen, Mrs. E. W.
Thornton, Mrs. T. F., Jr.
Tice, Mrs. W. A.
Trunnell, Mrs. T. L.
Updegraff, Mrs. T. R.
Waldorf, Mrs. R. D.
Walker, Mrs. J. R.
Waterbury, Mrs. C. A., Jr.
Weyhrauch, Mrs. R. A.
Wicklund, Mrs. M. M.
Winder, Mrs. C. D.
Winninger, Mrs. L. T.
Woodward, Mrs. A. W.
Zager, Mrs. L. L.

BOONE COUNTY

Boone

Creamer, Mrs. Frank
Deering, Mrs. A. B.
Dennert, Mrs. W. G.
Greco, Mrs. L. R.
Gunn, Mrs. R. E.
Herman, Mrs. J. C.
Kane, Mrs. T. E.
Longworth, Mrs. W. H.
Manderscheid, Mrs. R. A.
Puntenney, Mrs. A. W.
Sloan, Mrs. M. G.
Sutton, Mrs. G. H., Jr.
Wall, Mrs. J. M.
Whitaker, Mrs. B. T.
Wicks, Mrs. R. L.

Ogden

Linder, Mrs. E. E.

Pilot Mound

Shane, Mrs. R. S.

BUCHANAN COUNTY

Independence

Free, Mrs. R. M.
Fuchs, Mrs. E. M.
Hersey, Mrs. N. L.
Ingham, Mrs. D. W.
Korson, Mrs. S. M.
Leehey, Mrs. P. J.
Loeck, Mrs. J. F.
Mochal, Mrs. J. L.
Nocella, Mrs. R. A.
Oestreicher, Mrs. Harry
Patterson, Mrs. J. C.
Shellito, Mrs. J. C.
Tidball, Mrs. C. W.
White, Mrs. C. E.

CASS COUNTY

Anita

LaRue, Mrs. J. L.

Atlantic

Juel, Mrs. E. M.
Moriarty, Mrs. J. F.
Needles, Mrs. R. M.
Petersen, Mrs. E. C.
Petersen, Mrs. M. T.
Weresh, Mrs. J. D.
Wilcox, Mrs. D. E.

Cumberland

Weaver, Mrs. R. L.

Griswold

England, Mrs. B. J.
Moe, Mrs. R. H.

CERRO GORDO COUNTY

Clear Lake

Brownstone, Mrs. Manuel
Morgan, Mrs. H. W.
Morgan, Mrs. P. W.

Mason City

Adams, Mrs. C. O.
Baker, Mrs. J. M.
Dixon, Mrs. J. B.
Houlahan, Mrs. J. E.
Kapke, Mrs. F. W.
Kirkham, Mrs. L. J.
Marty, Mrs. S. D.
Matthews, Mrs. Alexander
Potter, Mrs. P. H.
Powell, Mrs. R. M.
Smith, Mrs. R. B.
Swanson, Mrs. L. W.
Tice, Mrs. G. I.
Vegars, Mrs. S. H.

CLAY COUNTY

Spencer

Edington, Mrs. F. D.
Fieselmann, Mrs. G. F.
Frink, Mrs. L. F.
Jones, Mrs. C. C.
King, Mrs. D. H.
Munger, Mrs. E. E.

CLINTON COUNTY

Clinton

Amesbury, Mrs. H. A.
Barrent, Mrs. M. E.
Carey, Mrs. E. T.
Dwyer, Mrs. R. E.
Edwards, Mrs. J. F.
Ellison, Mrs. G. M.
Emmons, Mrs. M. B.
Foster, Mrs. W. H.
Griffith, Mrs. W. H.
Hill, Mrs. D. E.
Jensen, Mrs. A. L.
Jowett, Mrs. J. R.
Kershner, Mrs. F. O.
King, Mrs. R. C.
Meyer, Mrs. A. K.
Mirick, Mrs. D. F.
Monahan, Mrs. J. L.
Nelken, Mrs. Leonard
Nelson, Mrs. R. J.
Norment, Mrs. J. E.
O'Donnell, Mrs. J. E.
Petersen, Mrs. V. W.
Scanlan, Mrs. G. C.
Schumacher, Mrs. D. R.

Taylor, Mrs. J. H.
Waggoner, Mrs. C. V.
Weih, Mrs. E. P.
Wellman, Mrs. T. G.
Young, Mrs. J. J.

DeWitt

Ash, Mrs. W. H.
Marme, Mrs. G. W.

Grand Mound

Christiansen, Mrs. C. C.

Fulton, Illinois

Vruno, Mrs. M. J.

DALLAS-GUTHRIE COUNTIES

Adel

Fail, Mrs. C. S.

Casey

Krueger, Mrs. N. L.
Van Duzer, Mrs. W. R.

Dallas Center

Castles, Mrs. W. A.
Lister, Mrs. E. E.

Dexter

Chapler, Mrs. K. M.
Osborn, Mrs. C. R.

Granger

Smith, Mrs. R. T.

Guthrie Center

Neff, Mrs. Herbert
Thornburg, Mrs. W. V.
Todd, Mrs. D. W.

Jamaica

Seidler, Mrs. W. A.
Seidler, Mrs. W. A., Jr.

Ogden

Donovan, Mrs. M. J.

Panora

Nicoll, Mrs. C. A.
Peterson, Mrs. R. J.

Perry

Beckman, Mrs. P. W.
Cochrane, Mrs. A. M.
Deranleau, Mrs. R. F.
Diddy, Mrs. K. W.
Ross, Mrs. A. J.
Wildberger, Mrs. W. C.
Wilke, Mrs. F. A.

Stuart

*Warren, Mrs. E. T.

Van Meter

Felter, Mrs. A. G.

Woodward

Ping, Mrs. E. C.
Porter, Mrs. C. E.
Smith, Mrs. H. W.

DAVIS COUNTY

Bloomfield

Allen, Mrs. R. L.
Fenton, Mrs. C. D.
Gilfillan, Mrs. E. O.
Haufe, Mrs. W. D.
Jaskunas, Mrs. S. R.
Meyers, Mrs. P. T.
Mincks, Mrs. J. R.
Scheibe, Mrs. J. R.
Schoonover, Mrs. Richard

DELAWARE COUNTY

Earlville

Rogers, Mrs. C. B.

Edgewood

Compton, Mrs. J. D.

Manchester

Clark, Mrs. R. E.
Ennis, Mrs. H. H.
Stepp, Mrs. J. K.
Tyrrell, Mrs. J. E.
Willett, Mrs. W. J.

Strawberry Point

Andersen, Mrs. H. M.

DES MOINES COUNTY

Burlington

Aid, Mrs. F. H.
Allen, Mrs. R. B.
Bell, Mrs. R. S.
Coulson, Mrs. F. H.
Crawford, Mrs. R. H.
Crawford, Mrs. W. M.
Crow, Mrs. G. B.
Dawson, Mrs. O. L.
Ditto, Mrs. B. L.
Eastburn, Mrs. H. B.
Eggleston, Mrs. A. A.
Foss, Mrs. J. F.
Friday, Mrs. W. C.
Gibbs, Mrs. G. M.
Guiang, Mrs. Sixto, Jr.
Hosford, Mrs. H. F.
Jenkins, Mrs. G. D.
Lee, Mrs. W. R.
Lohmann, Mrs. C. J.
McKitterick, Mrs. J. C.
Mazur, Mrs. T. T.
Murray, Mrs. J. H.
Nessa, Mrs. C. B.
Ober, Mrs. F. G.
Parsons, Mrs. Earl
Pearson, Mrs. G. J.
Petersen, Mrs. D. C.
Rowley, Mrs. R. D.
Russell, Mrs. E. P.
Saar, Mrs. J. L., Jr.
Stockdale, Mrs. J. C.
Stoikovic, Mrs. J. P.
Sulzbach, Mrs. J. F.
Vannix, Mrs. G. L.
Walker, Mrs. G. L.
Wallace, Mrs. L. F.
Zabloudil, Mrs. W. C.

Mediapolis

Roules, Mrs. J. F.

New London

Mohler, Mrs. F. R.

DICKINSON COUNTY

Arnolds Park

Farago, Mrs. D. S.

Lake Park

Coble, Mrs. R. J.

Spirit Lake

Johnson, Mrs. E. L.
Rodawig, Mrs. D. F.
Rodawig, Mrs. D. F., Jr.
Scott, Mrs. P. A.

DUBUQUE COUNTY

Dubuque

Alt, Mrs. L. P.
Bartels, Mrs. E. R.
Barton, Mrs. R. L.
Baughman, Mrs. D. R.
Benda, Mrs. T. J.
Chapman, Mrs. J. S.
Coffman, Mrs. E. W.
Conklin, Mrs. E. V.
Connelly, Mrs. E. J.
Conzett, Mrs. D. C.
Entringer, Mrs. A. J.
Faber, Mrs. L. A.
Fuerste, Mrs. Frederick
Graves, Mrs. J. P.
Greteman, Mrs. T. J.
Howell, Mrs. D. A.
Kapp, Mrs. D. F.
Kassmeyer, Mrs. J. C.
Kelly, Mrs. W. J.
Keohen, Mrs. G. F.
Lagen, Mrs. M. S.
Laube, Mrs. P. J.
Lee, Mrs. R. H.
McFarlane, Mrs. D. J.
McKay, Mrs. R. V.
McNamara, Mrs. R. J.
Melgaard, Mrs. R. T.
Merritt, Mrs. F. B.
Metzner, Mrs. F. N.
Moberly, Mrs. J. W.
Moeller, Mrs. J. A.
Nakashima, Mrs. V. K.
Nemmers, Mrs. J. G.
Nesler, Mrs. A. B.
O'Brien, Mrs. S. A., Jr.
Olin, Mrs. E. E.
Orvis, Mrs. R. C.
Packard, Mrs. D. K.
Pfaff, Mrs. R. A.
Pfohl, Mrs. A. C.
Piekenbrock, Mrs. T. C.
Province, Mrs. William, Jr.
Rusk, Mrs. R. P.
Schueller, Mrs. C. J.
Sharpe, Mrs. D. C.
Skelley, Mrs. P. B.
*Steffens, Mrs. L. F.
Stevens, Mrs. C. W.
Storck, Mrs. R. D.
Strand, Mrs. C. M.
Straub, Mrs. J. J.
Theisen, Mrs. R. I.
Thorson, Mrs. J. A.
Vernon, Mrs. R. G.
Ward, Mrs. D. F.
Zelinskas, Mrs. L. P.

Dyersville

Garry, Mrs. P. E.
Griffin, Mrs. C. C.
Luehrsmann, Mrs. B. C.

EMMET COUNTY

Armstrong

Lindholm, Mrs. C. V.
Turner, Mrs. R. M.

Estherville

Bose, Mrs. R. P.
Clark, Mrs. J. P.
Cox, Mrs. R. L.
Dunn, Mrs. D. E.
Johnston, Mrs. C. B.
Lindholm, Mrs. H. A.
Powers, Mrs. J. L.
Vaubel, Mrs. E. K.
Wolters, Mrs. D. E.

Graettinger

Dawson, Mrs. R. J.

GREENE COUNTY

Churdan

Lohr, Mrs. P. E.

Grand Junction

Wetrich, Mrs. M. F.

Jefferson

Black, Mrs. J. R.
Bridge, Mrs. B. C.
Brinker, Mrs. M. H.
Canady, Mrs. G. F.
Carr, Mrs. R. T.
Hamilton, Mrs. B. C.
Jongewaard, Mrs. A. J.
Limburg, Mrs. J. I., Sr.
Nelson, Mrs. L. C.
Thompson, Mrs. E. D.

Paton

Knosp, Mrs. A. A.

Rippey

Chase, Mrs. W. E.

Scranton

Jongewaard, Mrs. R. E.

GRUNDY COUNTY

Conrad

Jacobs, Mrs. E. L.

Grundy Center

Mol, Mrs. H. L.
Reedholm, Mrs. E. A.
Rose, Mrs. J. E.

Reinbeck

Jaouis, Mrs. J. R.
Kahler, Mrs. H. V.

Wellsburg

Meyer, Mrs. R. J.

HAMILTON COUNTY

Stanhope

Anderson, Mrs. D. C.

Webster City

Brown, Mrs. E. F.
Buxton, Mrs. O. C., Jr.
Crumpton, Mrs. R. C.
Howar, Mrs. B. F.
Ledogar, Mrs. J. A.
Paschal, Mrs. G. A.
Patterson, Mrs. R. A.
Ptacek, Mrs. J. L.
Rambo, Mrs. E. F.

JEFFERSON COUNTY

Fairfield

Castell, Mrs. J. W.
Cook, Mrs. K. G.
Dunlevy, Mrs. J. H.
Gittler, Mrs. Ludwig
McClurg, Mrs. F. H.
Morgan, Mrs. J. N.
Ryan, Mrs. R. A.
Strong, Mrs. K. H.
Turner, Mrs. J. H.
Watson, Mrs. C. F.

LEE COUNTY (North)

Fort Madison

Adams, Mrs. L. E.
Casey, Mrs. J. M.
DeLashmutt, Mrs. E. J.
Dierker, Mrs. L. J.
Doering, Mrs. V. T.
Feightner, Mrs. R. L.
Grimwood, Mrs. W. H.
Harper, Mrs. G. E.
Harper, Mrs. H. D.
Helling, Mrs. H. S.
Kasten, Mrs. W. C.
McGee, Mrs. J. E.
McGinnis, Mrs. G. C.
McIllece, Mrs. R. C.
McMillan, Mrs. G. J.
Murphy, Mrs. R. E.
Noble, Mrs. F. W.
Reimers, Mrs. R. S.
Richmond, Mrs. A. C.
Richmond, Mrs. F. R., Jr.
Schrier, Mrs. H. L.
Werner, Mrs. H. T.

West Point

Poepsel, Mrs. F. L.

LYONS COUNTY

George

Gessford, Mrs. H. H.
Lavender, Mrs. J. G.

Inwood

Bullock, Mrs. G. D.

Rock Rapids

Cook, Mrs. S. H.
Griesy, Mrs. C. V.
Wubbena, Mrs. A. C.

MAHASKA COUNTY

Fremont

Duncan, Mrs. Ellis

New Sharon

Phelps, Mrs. R. E.

Oskaloosa

Alberti, Mrs. R. L.
Atkinson, Mrs. G. S.
Bennett, Mrs. G. W.
Bos, Mrs. H. C.
Campbell, Mrs. D. K.
Campbell, Mrs. W. V.
Catterson, Mrs. L. F.
Clark, Mrs. G. H.
Collison, Mrs. R. M.
Gillett, Mrs. F. A.
Grahek, Mrs. L. J.
Lemon, Mrs. K. M.
Smith, Mrs. S. A.
Voigt, Mrs. F. O.
Wilcox, Mrs. E. B.

MARION COUNTY

Knoxville

Arnott, Mrs. G. M.
Burroughs, Mrs. C. R.
Byrnes, Mrs. A. W.
Carver, Mrs. D. C.
Clark, Mrs. T. D.
Hake, Mrs. D. H.
Mater, Mrs. D. A.
Nicholson, Mrs. C. G.
Ralston, Mrs. F. P.
Regnier, Mrs. W.
Schanche, Mrs. A. N.
Sloterdyk, Mrs. Yme

MARSHALL COUNTY

Marshalltown

Carpenter, Mrs. R. C.
Cloud, Mrs. A. B.
Crandall, Mrs. J. S.
Garland, Mrs. J. C.
Goodman, Mrs. L. O.
Hansen, Mrs. R. R.
Irvine, Mrs. J. E.
Jeffries, Mrs. M. E.
Keyser, Mrs. E. L.
Kruse, Mrs. R. H.
Marble, Mrs. E. J.
Marble, Mrs. W. P.
Reading, Mrs. D. S.
Sauer, Mrs. H. E.
Schroeder, Mrs. A. J.
Sheeler, Mrs. I. H.
Shultz, Mrs. William
Sinning, Mrs. J. E.
Southwick, Mrs. W. W.
Stegman, Mrs. J. J.
Watt, Mrs. R. H.
Wells, Mrs. R. C.
Wessels, Mrs. W. R.
Wolfe, Mrs. O. D.
Wolfe, Mrs. R. M.

State Center

Robinson, Mrs. R. G.
Sokol, Mrs. C. R.

MONONA COUNTY

Battle Creek

Nafziger, Mrs. E. G.

Mapleton

Ganzhorn, Mrs. H. L.
Ingham, Mrs. P. G.

Moorhead

Stauch, Mrs. M. O.

Onawa

Garred, Mrs. W. P.
Gaukel, Mrs. L. A.
Gingles, Mrs. E. E.
Helt, Mrs. V. G.
McClellan, Mrs. J. W.
Wolpert, Mrs. P. L.

Sloan

Fitzgerald, Mrs. J. D.

Ute

Liska, Mrs. E. J.

Whiting

Garred, Mrs. J. L.

MONTGOMERY COUNTY

Red Oak

Alden, Mrs. Oscar
Bastron, Mrs. H. C.
Fickel, Mrs. J. D.
Hansen, Mrs. F. A.
Seabloom, Mrs. J. L.
Smith, Mrs. S. R.
Sorensen, Mrs. E. M.
Thomsen, Mrs. T. F.

Villisca

Croxdale, Mrs. E. L.
Poore, Mrs. S. D.

OSCEOLA COUNTY

Harris

Paulsen, Mrs. H. B.

Sibley

Carroll, Mrs. T. J.
O'Leary, Mrs. F. B.
Rizzo, Mrs. F. M.
Thomas, Mrs. J. H.

PAGE COUNTY

Clarinda

Bossingham, Mrs. E. N.
Catlin, Mrs. K. A.
Flynn, Mrs. C. H.
Frenkel, Mrs. H. S.
Jensen, Mrs. K. V.
Johnson, Mrs. N. M.
Kuehn, Mrs. W. G.
Matthews, Mrs. R. J.
Niver, Mrs. E. O.
Ramsdell, Mrs. S. T.
Schmidhofer, Mrs. Ernst
Sperry, Mrs. F. S.

Shenandoah

Brush, Mrs. C. H.
Eisenach, Mrs. J. R.
Gee, Mrs. K. J.
Gottsch, Mrs. E. J.
Henstorf, Mrs. H. R.
Maloy, Mrs. W. H.
Powers, Mrs. G. H.
Strathman, Mrs. L. C.

Sidney

Pettipiece, Mrs. Clayton

PALO ALTO COUNTY

Algona

Plott, Mrs. C. L.

Emmetsburg

Brereton, Mrs. H. L.
Brink, Mrs. R. J.
Coffey, Mrs. J. L.
Moore, Mrs. C. C.
Powers, Mrs. H. R.
Wigdahl, Mrs. L. C.

Mallard

Keeney, Mrs. G. H.

POCAHONTAS COUNTY

Gilmore City

Smith, Mrs. C. J.

Laurens

Gannon, Mrs. James
Pitluck, Mrs. H. L.

Pocahontas

Rhodes, Mrs. J. M.

Rolfe

Loxterkamp, Mrs. E. O.

POLK

Ankeny

Hach, Mrs. F. T.
Neilsen, Mrs. A. T.

Des Moines

Abbott, Mrs. W. D.
Alberts, Mrs. M. E.
Allender, Mrs. R. B.
Amick, Mrs. P. P.
Anderson, Mrs. H. N.
Anderson, Mrs. R. W.
Anderson, Mrs. W. D.
Augspurger, Mrs. B. B.
Bakody, Mrs. J. T.
Baker, Mrs. W. E.
Bates, Mrs. M. T.

Birge, Mrs. R. F.
Blair, Mrs. D. W.
Bond, Mrs. T. A.
Bone, Mrs. H. C.
Bruner, Mrs. J. M.
Burcham, Mrs. T. A.
Burgeson, Mrs. F. M.
Burke, Mrs. E. T.
Burns, Mrs. Harry
Burr, Mrs. C. L.
Byers, Mrs. Joseph
Carryer, Mrs. C. H.
Cash, Mrs. P. T.
Caudill, Mrs. G. G.
Chambers, Mrs. J. W.
Chase, Mrs. W. B.
Chase, Mrs. W. B., Jr.
Clemens, Mrs. A. L.
Coleman, Mrs. F. C.
Corn, Mrs. H. H.
Coughlan, Mrs. D. W.
Cromwell, Mrs. J. O.
Crowley, Mrs. D. F., Jr.
Culbertson, Mrs. R. A.
Dahl, Mrs. H. W.
Decker, Mrs. H. G.
deGravelles, Mrs. W. D.
Dickens, Mrs. J. H.
Dorner, Mrs. R. A.
Downing, Mrs. A. H.
Downing, Mrs. J. A.
Drew, Mrs. E. J.
Dubansky, Mrs. M. H.
Dyson, Mrs. R. E.
Edwards, Mrs. C. C.
Eklund, Mrs. H. E.
Ellis, Mrs. H. G.
Ely, Mrs. L. O.
Fatland, Mrs. J. L.
Foss, Mrs. R. H.
Frazer, Mrs. J. B.
From, Mrs. Paul
George, Mrs. E. M.
Gibson, Mrs. D. N.
Gibson, Mrs. P. E.
Glomset, Mrs. D. A.
Goldberg, Mrs. Louis
Gordon, Mrs. A. M.
Green, Mrs. J. W., Jr.
Greenhill, Mrs. Solomon
Gurau, Mrs. H. H.
Gutenkauf, Mrs. C. H.
Haines, Mrs. D. J.
Hammer, Mrs. R. W.
Hansell, Mrs. W. W.
Hansen, Mrs. N. M.
Harnagel, Mrs. E. J.
Hart, Mrs. P. V.
Hayek, Mrs. J. M.
Hayne, Mrs. R. A.
Heeren, Mrs. R. H.
Helseth, Mrs. C. T.
Hertko, Mrs. E. J.
Hess, Mrs. John, Jr.
Hill, Mrs. L. F.
Hines, Mrs. R. E.
Hirsch, Mrs. M. R.
Hoffman, Mrs. R. W.
Holzworth, Mrs. P. R.
Hornaday, Mrs. W. R.
Hostetter, Mrs. J. I.
Hughes, Mrs. P. K.
Huston, Mrs. K. G.
Irving, Mrs. N. W., Jr.
James, Mrs. D. W.
Jenkins, Mrs. H. F., Jr.
Jenks, Mrs. A. L.
Johnson, Mrs. C. O.
Johnson, Mrs. R. M.
Johnston, Mrs. C. H.
Jones, Mrs. C. C.
Kast, Mrs. D. H.
Katzman, Mrs. F. S.
Kelley, Mrs. J. H.
Kelly, Mrs. D. H.
Kelly, Mrs. D. H., Jr.
Kelsey, Mrs. J. E.
Kern, Mrs. G. A.
Kilgore, Mrs. B. F.
Kleinberg, Mrs. H. E.
Klocksiem, Mrs. H. L.
Knox, Mrs. R. M.
Koons, Mrs. C. H.
LaMar, Mrs. J. W.
Lambrecht, Mrs. P. B.
Latchem, Mrs. C. W.
Lawler, Mrs. M. P., Jr.
Losh, Mrs. C. W., Jr.
Lovejoy, Mrs. E. P.
Lowry, Mrs. E. C.
Lulu, Mrs. D. J.
Maher, Mrs. L. L.
Mark, Mrs. M. S.
Marquis, Mrs. G. S.
Matheson, Mrs. J. H.
McBride, Mrs. D. F.
McClean, Mrs. E. D.
McCoy, Mrs. H. J.
McGarvey, Mrs. N. J.
McNamee, Mrs. J. H.
Meredith, Mrs. L. K.
Merillat, Mrs. H. C.
Merkel, Mrs. A. E.
Merkel, Mrs. B. M.
Merritt, Mrs. J. O.
Meservey, Mrs. M. A., Jr.
Minassian, Mrs. T. A.
Mooney, Mrs. J. C.
Moore, Mrs. F. A.
Moore, Mrs. R. M.
Morrison, Mrs. J. R.
Morrissey, Mrs. W. J.
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Throckmorton, Mrs. J. F.
Throckmorton, Mrs. T. B.
Throckmorton, Mrs. T. D.
Toubes, Mrs. A. A.
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Tyrrell, Mrs. J. W.
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Walter, Mrs. D. J.
Watters, Mrs. G. H.
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White, Mrs. G. H.
Wichern, Mrs. H. E.
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Wooters, Mrs. R. C.
Young, Mrs. D. C.
Young, Mrs. G. G.
Zaharis, Mrs. G. M.
Zoeckler, Mrs. S. J.

Huxley

Nelson, Mrs. A. L.

Indianola

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McGeehon, Mrs. R. C.
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Trueblood, Mrs. C. A.
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Cunningham, Mrs. M. B.

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Selo, Mrs. R. A.
Sternhill, Mrs. Isaac
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Trafton, Mrs. H. F.
Warden, Mrs. D. D.
Weir, Mrs. E. C.
West, Mrs. A. G.

Minden

Olsen, Mrs. M. E.

Oakland

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Harlan

Bisgard, Mrs. C. V.
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Kersten, Mrs. J. R.
Kersten, Mrs. P. M.
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Knowles, Mrs. F. L.

Lehigh

Kiesling, Mrs. H. F.

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Ossian

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Beye, Mrs. C. L.
Blackstone, Mrs. M. A.
Blenderman, Mrs. A. D.
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Boe, Mrs. Henry
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Bowers, Mrs. C. V.
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Dvorak, Mrs. J. E.
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Kelly, Mrs. J. F.
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Krigsten, Mrs. J. M.
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Reeder, Mrs. J. E., Jr.
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Wagner, Mrs. D. J.
Wainwright, Mrs. M. T.
Walston, Mrs. J. H.
Ware, Mrs. T. A.
Wiedemier, Mrs. J. L.
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Wilson, Mrs. F. W., Jr.

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Westly, Mrs. S. S.

Northwood

Allison, Mrs. M. P.
Bergen, Mrs. C. T.
Olson, Mrs. R. L.
Osten, Mrs. B. H.

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Leinbach, Mrs. S. P.
Pitcher, Mrs. A. L.

Clarion

Eaton, Mrs. R. C.
Gorrell, Mrs. R. L.
Hawkins, Mrs. C. P.
McCool, Mrs. R. F.
Smith, Mrs. R. W.
Young, Mrs. R. A.

Eagle Grove

Harding, Mrs. D. A.
Hogenson, Mrs. G. B.
Schaeferle, Mrs. M. J.
Smith, Mrs. E. M.

Goldfield

Basinger, Mrs. B. L.

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Bendixen, Mrs. F. C., LeMars (Plymouth)
Billingsley, Mrs. J. W., Newton (Jasper)
Bishop, Mrs. J. F., Davenport (Scott)
Bliss, Mrs. W. R., Ames (Story)
Bourne, Mrs. M. G., Algona (Kossuth)
Bristow, Mrs. G. B., Osceola (Clark)
Broman, Mrs. J. A., Maquoketa (Jackson)
Brown, Mrs. I. E., Hartley (O'Brien)
Brunk, Mrs. A. W., Prescott (Adams)
Brunkhorst, Mrs. J. B., Waverly (Bremer)

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Carney, Mrs. R. M., Brooklyn (Poweshiek)
Carpenter, Mrs. F. E., Newton (Jasper)
Carson, Mrs. R. W., Winterset (Madison)
Carstensen, Mrs. V. H., Waverly (Bremer)
Cooper, Mrs. W. K., Cedar Rapids (Linn)
Cornish, Mrs. J. A., Storm Lake (Buena Vista)

Day, Mrs. P. M., Oskaloosa (Mahaska)
Downing, Mrs. W. L., LeMars (Plymouth)

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Evans, Mrs. J. E., Winterset (Madison)

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Getty, Mrs. E. B., Primghar (O'Brien)
Goad, Mrs. R. R., Muscatine (Muscatine)

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Hanske, Mrs. E. A., Bellevue (Jackson)
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Kern, Mrs. L. C., Waverly (Bremer)
Koelling, Mrs. L. H., Newton (Jasper)

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Peterson, Mrs. J. C., Jr., Hartley (O'Brien)
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Powers, Mrs. W. J., Iowa City (Johnson)
Pumphrey, Mrs. L. C., Keokuk (Lee)
Randall, Mrs. W. L., Hampton (Franklin)
Rankin, Mrs. J. R., Keokuk (Lee)
Rathe, Mrs. H. W., Waverly (Bremer)
Rathe, Mrs. J. W., Waverly (Bremer)
Readinger, Mrs. H. M., New London
Rolfs, Mrs. F. O., Parkersburg (Butler)
Rosebrook, Mrs. L. E., Ames (Story)
Rozeboom, Mrs. E. G., Winterset (Madison)

Saar, Mrs. J. W., Keokuk (Lee)
Scheffel, Mrs. M. L., Malvern (Mills)
Sedlacek, Mrs. L. B., Cedar Rapids (Linn)
Shaw, Mrs. D. F., Britt (Hancock)
Shaw, Mrs. R. E., Waverly (Bremer)
Singer, Mrs. J. R., Newton (Jasper)
Smead, Mrs. L. L., Newton (Jasper)
Smith, Mrs. R. T., Bettendorf (Scott)
Spinharney, Mrs. L. J., Cherokee (Cherokee)
Stark, Mrs. C. H., Cedar Rapids (Linn)
Stumme, Mrs. L. P., Denver (Bremer)
Sweeney, Mrs. L. J., Sanborn (O'Brien)

Trotzig, Mrs. J. P., Akron (Plymouth)

Vander Stoep, Mrs. H. L., LeMars (Plymouth)
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Vorhes, Mrs. C. E., Sheldon (O'Brien)

Wagner, Mrs. E. C., Plainfield (Bremer)
Ward, Mrs. L. W., Oelwein (Fayette)
Warner, Mrs. E. D., Iowa City (Johnson)
Whitehill, Mrs. N. M., Ackley (Hardin)
Whitmire, Mrs. J. E., Sumner (Bremer)
Widmer, Mrs. J. G., Wayland (Henry)
Williams, Mrs. L. B., Maquoketa (Jackson)
Wise, Mrs. J. H., Cherokee (Cherokee)
Wolf, Mrs. H. H., Elgin (Fayette)

York, Mrs. D. L., Creston (Union)

* Deceased

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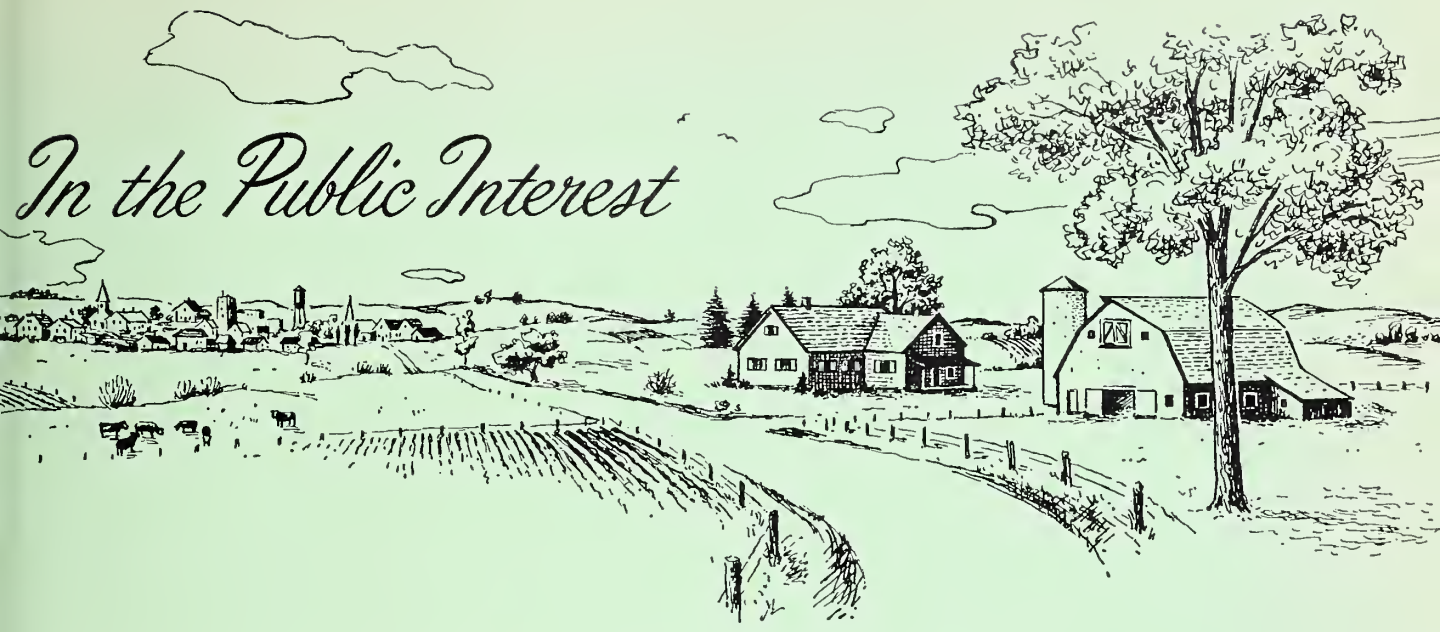
*Mrs. E. L. Bower, Guthrie Center.....1930
*Mrs. Channing Smith, Granger.....1931
*Mrs. P. M. McLaughlin, Sioux City.....1932
Mrs. W. A. Seidler, Jamaica.....1933
Mrs. J. A. Downing, Des Moines.....1934
Mrs. M. C. Hennessy, Iowa City.....1935
Mrs. C. A. Boice, Washington.....1936
*Mrs. S. E. Lincoln, Des Moines.....1937
Mrs. D. W. Harman, Glenwood.....1938
Mrs. E. A. Hanske, Bellevue.....1939
*Mrs. E. T. Warren, Stuart.....1940
Mrs. W. R. Hornaday, Des Moines.....1941
*Mrs. F. W. Mulsow, Cedar Rapids.....1942
Mrs. W. S. Reiley, Red Oak.....1943
Mrs. J. C. Decker, Sioux City.....1944
Mrs. S. S. Westly, Manly.....1945
Mrs. M. H. Brinker, Jefferson.....1946
Mrs. Fred Moore, Des Moines.....1947
Mrs. A. G. Felter, Van Meter.....1948
Mrs. R. M. Minkel, Fort Dodge.....1949
Mrs. C. H. Mitchell, Cincinnati.....1950
Mrs. H. W. Smith, Woodward.....1951
*Mrs. L. A. Coffin, Farmington.....1952
Mrs. E. B. Hoeven, Ottumwa.....1953
Mrs. L. R. Hegg, Rock Valley.....1954
Mrs. C. H. Flynn, Clarinda.....1955
Mrs. D. H. King, Spencer.....1956
Mrs. J. F. Gerken, Waterloo.....1957
Mrs. H. C. Merillat, Des Moines.....1958
Mrs. E. A. Larsen, Centerville.....1959
Mrs. R. F. Nielsen, Cedar Falls.....1960

* Deceased



Civic Leaders Should Take Note of

The Colorado Health Plan's Ills

(From THE WALL STREET JOURNAL, *Friday, June 9, 1961.)*

When we described the Colorado plan for providing medical care, hospitalization and nursing-home services to the needy aged ("In the Public Interest," March, 1961), our intention was to point out only that its management by Blue Cross-Blue Shield had worked out very well. As a matter of fact, we mentioned in that article that over-utilization had necessitated curtailments of benefits, but it may be that some of our readers got the impression that we endorsed the scheme in its entirety.

THE WALL STREET JOURNAL'S *recent news story (here somewhat abbreviated) provides a glimpse of the varied difficulties to which even well-managed state medical care schemes are subject.*

A little more than three years after it began, Colorado's once widely heralded program of medical care for the aged is undergoing emergency surgery. Officials in this so-called "welfare" state issued orders earlier this year barring oldsters covered by its program from entering hospitals except in emergencies. In addition, they cut the maximum free hospital stay from 21 to 18 days, eliminated free ambulance service and limited nursing home care to only the most feeble of the aged.

The cutback in benefits followed disclosure that costs for the old-age medical program were far outstripping the $10 million budgeted for the fiscal year ending June 30; a $1.4 million deficit was looming. Even the recent cutbacks are not going to save the program from being splattered with red ink; state officials look for a deficit of more than $600,000 by the end of the fiscal year.

Increasing charges for hospital and medical services are contributing to Colorado's woes. Hospital fees have risen an average of 8 per cent annually in each of the past four years. But over-utilization of facilities is blamed by many for the bulk of the plan's fiscal ills. "When the state put up that money, it was like everybody had come into a big inheritance," says Walter R. McKinstry, chairman of the State Welfare Board which oversees the medical program. "Too many pensioners with colds and hernias decided it was time to go to the hospital. It wasn't long before we reached the bottom of the barrel."

IMPACT ON OTHER STATES

The Kennedy administration this year is pushing a plan to finance medical care for the aged through the Social Security program; officials already have revised their cost estimates upward, after deciding that their early forecasts of nursing home use were unrealistically low. As a result, the Administration may suggest a cut in proposed nursing home benefits.

Partly because of Colorado's troubles, North Dakota is building strong safeguards against overuse into its new medical-care-for-the-aged program scheduled to go into effect July 1. In Tennessee, Mrs. C. Frank Scott, commissioner of the Department of Welfare, says Colorado's experience is also playing a role in shaping her state's medical program. "Don't think that Colorado deficit doesn't scare a person," she declares. On March 1, New Mexico reduced its program's benefits, limiting hospital care for the elderly to a "life-endangered-only" basis. Murray A. Hintz, director of public welfare, explains: "We had to do something. We saw we were rapidly exceeding our budget."

CRACKDOWN ON ABUSES

Colorado's current cost cutting move marks the first reduction of any part of the old age program since it was set up in 1936. In 1956, voters approved the medical program for the state's oldsters and made any person drawing a pension from the state eligible for free medical care. Of 220,282 Coloradoans over 60 years of age, more than 52,000 were entitled to the medical benefits.

When voters approved the plan, they authorized a budget of $10 million annually. Hardly anyone at the time expected costs to approach such a figure for many years. Almost immediately, spending on the program ran higher than expected. In fiscal 1957-58, first full year of the plan, costs totaled $6,500,000; the next year they climbed to $8,151,000. By the third year, actual costs shot up to $10,246,000 but the Welfare Board avoided a deficit by postponing some spending until the current year. Early this year the problem could no longer be sidestepped. Benefits were cut sharply.

In addition, the state began a crackdown on abuses which had crept into the program and were siphoning off a growing share of the medical funds. For example, in March the Welfare Board snapped up the license of one nursing home for falsifying reports. Welfare officials also have been vexed by the large number of pensioners who have used the program to take care of needs other than medical. Frequently cited by officials are the lonely old ladies who go to the hospital as often as possible to revel in free food and attention. Also mentioned are couples who have used the plan as a handy "sitter" for parents who couldn't be left alone.

The Welfare Department also swung the axe on some of the broad powers exercised by physicians under the medical program. In a move that has stirred the anger of many physicians, the state ordered hospitals to establish admissions committees of three staff doctors to rule on the conditions of all patients.

PROTESTS ARE COMING FROM ALL SIDES

Though the state's medical societies have pledged their support to the Welfare Board's efforts, many individual doctors are holding back. In private conversations, some of them jealously oppose the idea of having their diagnoses picked over by other physicians. Some also fear that the possibility of public and professional criticism for "violating" the current rigid admissions requirements may make them dangerously over-cautious. Also, they blame the state for cutting back on hospital treatment without making more provisions for office and home care. Says one doctor: "What the state has done is to put us in the position of having to ignore many patients, notable those who are sick enough to use up their two [doctor's office] visits per quarter, but not sick enough to go to the hospital."

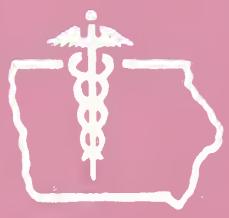
Many physicians are ruffled by the charges that they're to blame for the program's ills. Instead, they point to the pensioner. At a recent hearing of the state medical advisory board, Dr. Vetalis V. Anderson, president-elect of the Colorado Medical Society, accused healthy pensioners of "shopping around" until they found a doctor willing to put them in the hospital. At the same meeting, Dr. H. M. Husted, a Denver osteopath, told the board he has checked hospital charts and found "many who had no business taking up hospital beds."

As might be expected, some of the most vocal criticism of the recent cutbacks in the medical program is coming from the group most directly affected—the pensioners. "Medical care has been cut back to where the program is almost useless as far as old people are concerned," grumbles Charles E. Bloedarn, president of the National Annuity League, a powerful political-social group of retired Coloradoans. His solution, he says with a smile, is simple: "Change the law to read 'no less' than $10 million, rather than 'no more.'" Though Mr. Bloedarn comments partly in jest, his "solution" mirrors an opinion that the state should modify the $10 million ceiling. But any hopes for such an action have received sharp setbacks in the past few months. The Colorado legislature recently adjourned without heeding a request by Democratic Governor Stephen McNichols that it take steps to avert the approaching deficit in the medical care account.

OUTCOME STILL UNPREDICTABLE

The recent cutbacks, of course, are going to help the situation, though it's still too early to tell just how extensive the savings will be. Early reports to the Colorado Hospital Service (Blue Cross-Blue Shield), which the state has hired to administer medical payments, show hospital admissions since April 1 have dropped about 14 patients a day, or more than 30 per cent from the preceding month. For each day cut from a patient's stay, the state hopes to save about $23. Other benefits are accruing from the cost-cutting moves as well. By dropping free ambulance service, the state expects to save about $68,000 a year.

THE Journal OF THE IOWA STATE MEDICAL SOCIETY



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The Need for Discipline in Traffic Safety

CARL H. PESCH
DES MOINES

As I planned the remarks that I might make to you physicians on this subject, I felt as though I were preparing a message that had long since been delivered. Surely, in the more than 60 years since the first traffic death in this country, it would seem that everything possible must have been said on this subject, every emotional appeal must have been used, and every warning issued. Your meeting here today is one in a tradition of tens of thousands of safety meetings that have been held during half a century. Your predecessors and contemporaries in this concern for saving lives and avoiding crippling accidents upon our streets and highways have met countless times in church basements, school auditoriums, Legion halls and hotel ballrooms throughout the land. I suppose that if all the man-hours spent at those meetings were to be totaled, they would represent enough time to rebuild the pyramids—not to mention the good intentions expressed at those gatherings, which would have been sufficient to pave the road to the everlasting bonfire.

Inevitably, out of these years of concern, the effort to save lives has become a business. The traffic safety structure today resembles an industrial complex of national scope. It employs thousands of people in administration, research, promotion, engineering and education. State governments spend tens of millions of dollars to provide public safety commissions and bureaus. The federal government, with its roads programs, is billions-of-dollars big in the picture, too. And beyond all this are the private groups such as yours, providing volunteer service in this effort.

This view of the vast traffic-safety business is not calculated to encourage a speaker—especially not one who, like me, is relatively new to the field. One asks himself what he can say that will be new—what fresh direction he can point out—what challenge he can issue that has never been heard before.

IT'S FUTILE TO SEARCH FOR A GIMMICK

I am beginning to feel that perhaps the hot chase after the new, the fresh, the challenging in traffic safety may take us in the wrong directions. Now, certainly, I am not saying that there is nothing new to be learned, nothing new to be attempted, nothing new to be explored. In every field there is a frontier to be pushed back for the profit and progress of mankind. But in traffic safety, total dedication to the new approach, the hot idea, may only mean neglect of those things that we know will work.

If we think that somewhere there is a magic gimmick that will solve our safety problem, and if we all go rushing off to find this prize, what happens to the work in progress? Inevitably it must lag. Time and money for a full development of the proved programs must be lost—and when we lose time in pushing ahead effective safety programs, we lose lives.

Every day, I find, there is a decision of discipline to be made in traffic safety programing. There is a choice that must be made between the drudgery of trying to expand the old, proved programs, and the excitement of taking off in a new direction. This often is a difficult choice, for it is in our natures to seek the quick, dramatic solution. It is in our natures to take bold, arresting action. In many areas, this is a valuable urge, but in traffic safety it can deceive us. It can send us in pursuit of the magic gimmick. Let me try to give you an example of what I mean when I say that sound safety programing requires decisions of discipline.

Let's consider Anytown, Iowa—a typical, small city in Anywhere County. Last year was a bad year in Anytown. Four persons were killed in traffic accidents, and five more were killed out in the county. It was the worst death record in the history of the town and the county. Many of the citizens and civic organizations are aroused. The mayor calls a general meeting to consider the problem. Out of the meeting a committee is formed, charged with putting into effect a plan of action. What is the plan? Typically, it may be something like this. During a certain two- or three-week period, there is to be an all-out traffic safety promotion in Anytown. Every civic and social organization will join in. The mayor will issue a proclamation. The newspaper will print a safety story every day for two weeks. The radio station will promote safety every hour on the hour. A group is formed to find and honor the safest driver in town each day. All drivers will be urged to take their cars through a testing station during the two weeks. Another group will have members on all street corners warning pedestrians to walk carefully and watch for cars. There will be a safety parade, a queen will be elected, the high school band will march. For two weeks, the citizens of Anytown will be deluged with safety advice, warnings, pleas. The public safety commissioner may even be invited to speak, and I shall go.

Mr. Pesch is the commissioner of the Iowa Department of Public Safety, and he delivered this address on April 24, 1961, at the Annual Meeting of the Iowa Medical Society.

I shall go and join in because it is not my agency's business to discourage any voluntary community effort for safety. Indeed, we encourage it. But I may leave Anytown with a feeling of regret that the safety program is not a little more permanent, or based on an effort that will continue. For Anytown is launched on a strictly promotional undertaking that probably cannot be sustained. The good people involved in the safety drive must eventually run out of gas. The good people who are the targets of the safety campaign must eventually run out of patience and stop paying attention. At the end of the two weeks, everyone will be quite willing to hand out the recognition awards and let the whole thing drop.

The unfortunate thing is that the blameless citizens of Anytown may feel that they have done their bit—and more—for safety for the year. But what have they really done? They have gone in search of the magic gimmick. They have looked for the quick solution. They have taken the bold, satisfying action. But a month after their campaign, I think it might be hard to find in Anytown any new high-water mark of safety progress.

DISCIPLINE IS EFFECTIVE, THOUGH GLAMORLESS

Let's go back a moment to that original meeting in Anytown, where the suggestions were made that resulted in the safety promotion.

What if someone had stood up to suggest that another policeman be hired by the city, and another patrol car be purchased to increase enforcement of the traffic laws? He would have been heard politely and patiently, but across the mind of every listener would have passed the shadow of increased taxes. And let's be brutally honest about this point: perhaps many men at the meeting would have secretly feared that one more cop on the streets would increase his own chances of being arrested for a traffic violation. So the suggestion that another policeman be hired would have died in the enthusiasm for a promotional campaign that would cost little and endanger no one.

And yet we know with certainty, for it has been proved time after time and in place after place, that where traffic-law enforcement is increased, the numbers of accidents go down, injuries go down, deaths go down. It is a question of making a disciplined choice between an attractive, inexpensive gimmick, and a more costly, less exciting, but sound approach.

Again, let's imagine that during the safety meeting in Anytown, someone stood up to recommend that the driver-education course in the high school be expanded—that more students be urged to enroll, that more equipment be provided, and perhaps that an additional teacher be hired. Again, the shadow of increased costs passes over the minds of the listeners. Furthermore, this proposal is also essentially dull and unexciting. It promises no more than long-range benefits. It doesn't have the lure of strong, immediate action. So this suggestion, too, fades quietly away.

And yet we know that driver education in our schools is one of the programs that have had direct effects upon the traffic-accident rate. Study after study makes this point. Major insurance companies recognize it in reduced rates to young drivers who have completed driver-education courses. Here in Iowa, a recent study revealed these startling facts: 60 per cent of our 16- and 17-year-old drivers have completed driver-education courses, and from that group, last year, came *only one* of the drivers who were involved in fatal accidents; from the 40 per cent of the 16- and 17-year-olds who had not had driver education came 52 of the drivers who were involved in fatal accidents.

I could continue with this examination of Anytown's efforts at achieving traffic safety, but perhaps I have made my point. One of the key problems in traffic safety is discipline—the discipline to make the choice of strengthening existing, proved programs, before we rush off in pursuit of the attractive gimmick or the exciting promotion.

Now I hope I am not misunderstood. I am not attempting to detract from any of the safety efforts that various organizations have made. Certainly the pure promotion that we just considered must have thrown something into the balance on the side of safety in Anytown. Certainly enthusiasm is needed, and broad community effort is required. I only suggest that with discipline, efforts can be channeled toward more effective undertakings.

One of the great handicaps in making disciplined choices in safety programing is the staggering size of the problem that we face. Our state and national traffic-safety problem is like a jumbled range of mountains lying across our path. It's an intimidating and awesome thing to look at. There are times when crossing this range of mountains seems hopeless by any means other than luck. We see traffic-death tolls that reach upward to 40,000 deaths per year. Beyond that, we see the even greater peaks of injuries in traffic accidents—1,450,000 per year. Of the people who are injured each year, 120,000 are permanently disabled. And beyond this, the annual economic loss soars almost out of sight—$1,600,000,000 in lost wages each year due to traffic accidents; $150,000,000 in medical expenses; $2,350,000,000 in insurance costs.

Facing problems of this size and nature, it is small wonder that sometimes, almost in desperation perhaps, we look frantically for the quick, dramatic break-through—the gimmick solution.

But the thing that we must remember as we face this range of problems is that they are smaller by half than they would have been with-

out the traffic-safety work that has already been done. We have made progress—good progress—and that progress has been made with the old but sure formula of Engineering, Enforcement and Education.

Let me give you one example of that progress. We can count it in lives—Iowa lives. In 1935 in this state, 11.5 persons were killed in traffic accidents for every 100,000,000 miles of travel on our streets and highways. Last year, fewer than five were killed in this state for each 100,000,000 miles of travel. Actually, 618 people were killed in Iowa traffic accidents last year, but if last year's death rate had equalled the one for 1935, more that 1,600 people would have died on our streets and highways.

Now we should take nothing from these statistics other than, perhaps, a little encouragement—a little assurance that we are moving in the right direction. Our death and injury toll is tragic, and not for a moment is it to be considered negligible. But the progress we have made should be recognized as a promise that we can move even closer to a solution if we have the will and the discipline to do so.

If we have the will to assume the cost and to accept the personal limitations that are incident to increased traffic-law enforcement, we shall make progress. Last year, enforcement by the Iowa Highway Patrol increased 25 per cent over the previous year, and our traffic-death toll declined nine per cent in Iowa. Increased enforcement was not the whole reason, of course, but it surely played a part.

If we have the will to assume the cost of better, more safely engineered highways, we shall make progress. The traffic-death rate on the completed sections of our interstate highway system is less than half what it is on our regular primary highways in Iowa.

If we have the will and the discipline to expand safety education in our schools and through our private organizations, we shall make progress. I have already pointed out that, last year, the 60 per cent of our 16- and 17-year-old drivers who had had training contributed only one driver to a fatal traffic accident.

Now, I imagine that at this point some of you may be starting to lose patience with me. Some of you are saying, "He makes it all sound too simple. It couldn't be that easy." Of course you are right. Nothing that involves the constant movement and interweaving of millions of persons in motor vehicles can ever be handled perfectly.

REGIMENTATION, PERHAPS, CAN BE CARRIED TOO FAR

Human beings, I believe, cannot be and should not be engineered into a smooth-flowing mass that moves without incident or disagreement. What I have been discussing with you are directions in which we should go, but now I should like to turn, for a moment, to a much less certain area: how far our objectives should be pursued. Do we go all the way toward perfect safety for everyone, or do we stop short of the complete controls that would be necessary in reaching such a goal? It may be heresy to say it, but I think there may come a time when we must stop short.

I said a moment ago that increased enforcement will save lives—and it will—but I think there may be a point in the future beyond which enforcement should not be broadened. That point will be reached when the police powers given to traffic-safety agencies begin seriously to erode personal freedom and the rights of the individual. That will be a very difficult point to recognize in traffic safety, where every new policy and program can be justified as a life-saving measure. I don't think we have reached that point as yet, but we are, perhaps, approaching it. There is a need for the private citizen and the safety administrator especially to recognize this possibility. There may come a time when it is necessary to make a balanced judgment on just how far the police power can be allowed to expand in the name of safety.

I said, too, that expanded safety education will save lives—and it will—but here as well there may be a point beyond which it may be unwise to go. Personally, I should never want to see a school administrator placed in the position of having to discontinue a course in the liberal arts or the basic sciences in order to make time and personnel available for an expansion of safety education. Those who are zealous for safety education must always recognize the full scope of their responsibilities, and realize that there are areas of education and of personal freedom into which they must not intrude.

In the end, I think, what we are seeking is a prudence short of fear—a system of enforcement that is effective in achieving the welfare of the greatest number, but short of inflexibile, arbitrary control.

We shall advance in these directions and we shall save lives as long as there is a desire for advancement on the part of private citizens and of groups such as yours. No matter how urgently safety people may point out the objectives, our rate of progress will depend always upon your willingness to go along—upon your willingness to furnish the motive power. Anything that we, as a state agency, may accomplish depends upon your acceptance, your creation of legislation through your elected representatives. We can go no faster than you are willing to have us go, and that is as it should be.

DRIVER LICENSING NEEDS FURTHER STUDY

Many safety people feel that there is one area where the possibilities for saving lives remain

virtually unexplored. That is the area of driver licensing and testing. Under our present laws, we are required to license many drivers whose attitudes make them poor risks for pushing a grocery cart around a supermarket. We are required to return licenses to drivers who have compiled records that should, in all common sense, rule them off the roads for a period of years. We are making progress toward protecting the public from such risks, of course. Last year the Safety Department suspended or revoked the licenses of well over 9,000 Iowa drivers—more than in any previous year—and we feel sure that these actions must have played a part in the nine per cent reduction in traffic deaths during the year.

It seems logical to suppose that many more lives could be saved through stricter licensing control—expanded testing, psychological testing, testing on renewal of licenses, broadening the bases for suspension and revocation of licenses. But are you ready to accept such restraints? Are the majority of the people of Iowa ready for a strong move in that direction? The basic question here—and it is still being argued—is whether driving is a right or a privilege. The safety people charged with saving lives feel that driving is a privilege from which an individual may be barred on the basis of his attitude, record or physical incompetence. But the public's point of view in this matter may be somewhat different. I suspect that the public leans toward the premise that driving is a right, rather than a privilege that can be taken away. The average citizen, I think, would say, "Driving is *my* right, but the *other guy's* privilege. Don't touch my license, but watch that other guy."

I make this point simply to emphasize that progress in saving lives depends, ultimately, upon the attitude of the general public. We can go no further in enforcement, licensing or education that the public is willing to have us go. I am content to have it so, for I feel that it is one of the basic safeguards against the possible excesses that I mentioned earlier. But at the same time, it is the duty of the Safety Department to keep pushing up to the limits of what the public will accept. We feel that the public has given us a responsibility for leadership in advancing safety, and that if we go too far, it will let us know.

But here, too, lies an opportunity and a responsibility for you and for all other citizens. If the safety program is basically limited to what you are willing to accept in the way of controls and costs, then it is for groups such as yours constantly to examine the needs and your own attitudes. It is for you to determine whether the time has come for stricter licensing controls, for example. If you feel that it has, then your group and others like it should go to work actively to push the frontier in this area back another step or two. If you are ready to accept closer control of licensing, you should let us know, let your legislators know, and seek to influence other groups.

Traffic safety in Iowa will advance only as far and as fast as the people wish it to. But in this advance we must never let ourselves be deceived. Progress will come and will be maintained only so long as we have the wisdom and the courage to make disciplined choices in safety programs—choices between what we *know* will work and what we only *hope* will work.

ASPIRIN POISONING IN CHILDREN

A study of 94 accidental aspirin poisonings in children reveals that in all but one instance the child had been told that the pills were "candy."

Reporting in the July, 1961, issue of AMERICAN JOURNAL OF DISEASES OF CHILDREN, Dr. Roger J. Meyer, of Boston, said, "The entire group of children with but one exception had previous experience with acetylsalicylic acid, usually the flavored variety." This medication was used for virtually *every* illness or indisposition suffered by family members, with or without fever. Parents admitted that they encouraged acceptance by presenting it to children as "candy," and felt that this was an important factor in their children's ingestion of acetylsalicylic acid.

The cases studied involved children from one to five years old and were selected from 313 cases reported to the Boston Poisoning Information Center during a 12-month period.

The study showed that 62 of the children shared the aspirin with playmates, and sweetened aspirin was taken by the youngsters in 84 instances. Of the 94 cases, 73 occurred after aspirin had been used to treat another member of the family, and the majority of the poisonings (56.5 per cent) occurred less than an hour before the child's mealtime.

Dr. Meyer said that the predominating circumstances in the homes at the time of the poisoning fell into three categories. In 17 instances aspirin was being used for an illness in the family. In 29 cases, precautions had been taken but the child showed unusual resourcefulness in obtaining the tablets. In 48 cases, there was generally unsatisfactory health supervision or lack of understanding of children's needs.

"All families had a special place for medications, but two factors eliminated this family safeguard: (1) family ignorance concerning the dangers of acetylsalicylic acid, and (2) general lack of safety precautions against household hazards," Dr. Meyer commented.

Aspirin is not only the commonest childhood poison, but its widespread use, its attractive taste —at least in tablets prepared especially for children—and the late appearance of its toxic symptoms make it a particular threat to families with young children.

Scientific Articles

Chemotherapy of Cancer With Special Emphasis on the Large Bowel

LYNDON E. LEE, JR., M.D.
WASHINGTON, D. C.

THE PURPOSES OF this presentation are to stress realism as to present rates of cancer occurrence, to note the results that are being achieved with established modes of therapy, and to offer some indications of what chemotherapy may accomplish when effective drugs are applied in selected cases.

In cancer research, we note considerable restlessness, questioning of precepts, changings of focus and creation of doubts. Studies are attacking concepts long respected and heretofore virtually unassailable. Suddenly it seems evident that early diagnosis and adequate treatment, as preached in the past three decades, may not be the sole determining factors in arrest of disease or cure of patients.

Large clinical programs are directed toward the evaluation of possibly curative chemical agents, including hormones. For true assays of effectiveness in these substances, it is necessary to compare results with those achieved with more conventional forms of cancer treatment such as extirpation by surgery and destruction by radiotherapy. In developing comparisons, we are startled to realize that the glowing accounts of the use of accepted therapeutic modalities have been only "success stories," presenting little information on details of total treatment, seldom admitting failures or documenting their frequency, and giving no emphasis to iatrogenic morbidity—and mortality—from treatment. This unfortunate but necessary information is beginning to emerge. More significantly and hopefully, the need for such data and the wisdom of this reasoned approach seem increasingly recognized, although clinicians are sometimes reluctant to accept and act upon them.

The causes of confusion in discussions of cancer are not hard to find. Although there are some variations in what may be included as cancers, it can be said that no fewer than 300 histologic varieties of neoplasm are recognized. The International Classification of Diseases lists some 80 distinct malignant site entities encountered by the clinician. Although we designate this galaxy of diseases by a single term, "cancer," to imply that in development, diagnostic accessibility, treatment, responses to therapy or prognosis all of them are similar is to suggest an impossibility as unwarranted and dangerous as would be the idea that all infections may be considered the same. Just as in cases of infection, however, there are fundamental principles and concept similarities in cancer to which the patient, his physician and even the research worker may adhere. Increasingly, in fact, the analogy between infection and cancer is pertinent. In many clinical programs, currently, there are suggestions that in malignancies, just as in infections, Koch's postulates apply, considerations of host resistance are paramount, and cancer research properly has a large and growing concern with studies of viral and microbiologic cellular reactions. In the future, we can be sure, selected cancers will be treated with substances the administration of which will have justifications firmly rooted in immunology.

This state of restlessness, uncertainty and questioning is desirable in research, and in fact is the essence of its being. Less desirable may be the translation of that uncertainty to the busy prac-

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Dr. Lee is a member of the surgical staff of the U. S. Veterans Administration, and he made this presentation at the Postgraduate Conference on Surgery at the S.U.I. College of Medicine, on December 7, 1960.

ticing physician, with the chance of delayed, inadequate or inappropriate treatment for his patient.

OVERALL STATISTICS ON CANCER SURVIVALS ARE DISCOURAGING

Patients in whom disease persists in spite of our efforts to cure them may be counted our failures. One estimate of our effectiveness is the degree to which a full life may be provided these victims, in spite of their harboring incurable cancer. Which are these people, how many of them are there, and how are they to be treated?

The 1959 edition of "Facts on the Major Killing and Crippling Diseases in the United States" indicates that the new cases of cancer total 466,000 each year, and that 228,000 of these are men and 238,000 are women.

Table 1 indicates which cancers are the most frequent in men, their frequency and the proportions of the various types in the total. Included among the many less frequent cancers are those of the pancreas, esophagus, brain, liver and biliary passages—some of the most lethal and unapproachable malignancies with which we are faced. There is little comfort for their victims in the fact that each of these is diagnosed in fewer than three patients of each 100 who come to us with cancer.

Table 2 shows that among the ladies, the 10 most frequent cancers account for perhaps three of every four encountered. Again, the other types include cancers of the liver, pancreas, brain and less frequent sites—malignancies in which the chance for cure is remote.

Figure I also summarizes the findings in a comprehensive study of end results initiated by staff members of the National Cancer Institute. The first offerings from this group became available in September, 1960, in a compilation entitled "Survival Experience of Patients With Malignant Neoplasms." Limitations in these data are fully recognized and were ably emphasized in the presentation by Dr. Sidney Cutler, of the Biometry Branch of the National Cancer Institute. He has kindly provided firm facts which permit general comparisons of the yearly incidences of malignant diseases, with the deaths within five years from cancers at these same sites.

These ominous figures may not appear credible when small or selected series are reviewed, for this National Cancer Institute summary is not based on a collection of "success stories," but is intended to give the complete picture at the national level. Among men, we may cure over 90 per cent of skin cancers. (The expression "90 per cent cure" really means that of every 10 persons so afflicted, one ultimately is 100 per cent dead from his disease.) But among esophageal cancer patients, 99 out of 100 afflicted die of their disease; among lung cancer patients, 97 out of each 100 die; among leukemia patients, some 95 to 100 of each 100 die; and although for some currently unknown

TABLE 1

NEW CASES OF CANCER IN THE U. S. EACH YEAR*

Males

Site of Origin	Estimated Annual Incidence of New Cases of Disease	Per Cent of Total
Skin	31,000	13.6
Lung and Bronchus	26,000	11.5
Stomach	24,000	10.5
Prostate	24,000	10.5
Large Intestine	20,000	8.8
Buccal Cavity and Pharynx	15,500	6.8
Urinary Organs	15,500	6.8
Rectum	13,500	5.9
Lymphomas	8,000	3.5
Leukemia and Aleukemia	6,000	2.6
Pancreas	6,000	2.6
Esophagus	6,000	2.6
Larynx	6,000	2.6
Liver and Biliary Passages	5,000	2.2
Brain and Nervous System	4,000	1.8
All Other Sites	17,500	7.7
TOTAL	228,000	100.0

TABLE 2

NEW CASES OF CANCER IN THE U. S. EACH YEAR*

Females

Site of Origin	Estimated Annual Incidence of New Cases of Disease	Per Cent of Total
Breast	52,000	21.8
Cervix Uteri	25,000	10.5
Skin	24,000	10.1
Large Intestine	22,000	9.2
Stomach	12,500	5.3
Rectum	12,500	5.3
Ovary	11,500	4.8
Corpus Uteri	8,000	3.4
Urinary Organs	7,000	2.9
Lymphomas	6,000	2.5
Liver and Biliary Passages	6,000	2.5
Lung and Bronchus	5,000	2.1
Leukemia and Aleukemia	5,000	2.1
Pancreas	4,000	1.7
Buccal Cavity and Pharynx	4,000	1.7
Brain and Nervous System	3,000	1.3
All Other Sites	30,500	12.8
TOTAL	238,000	100.0

* Source: "Facts on the Major Killing and Crippling Diseases in the United States Today," 1959 edition.

ANNUAL CANCER INCIDENCES AND NUMBERS OF DEATHS WITHIN FIVE YEARS
MALES

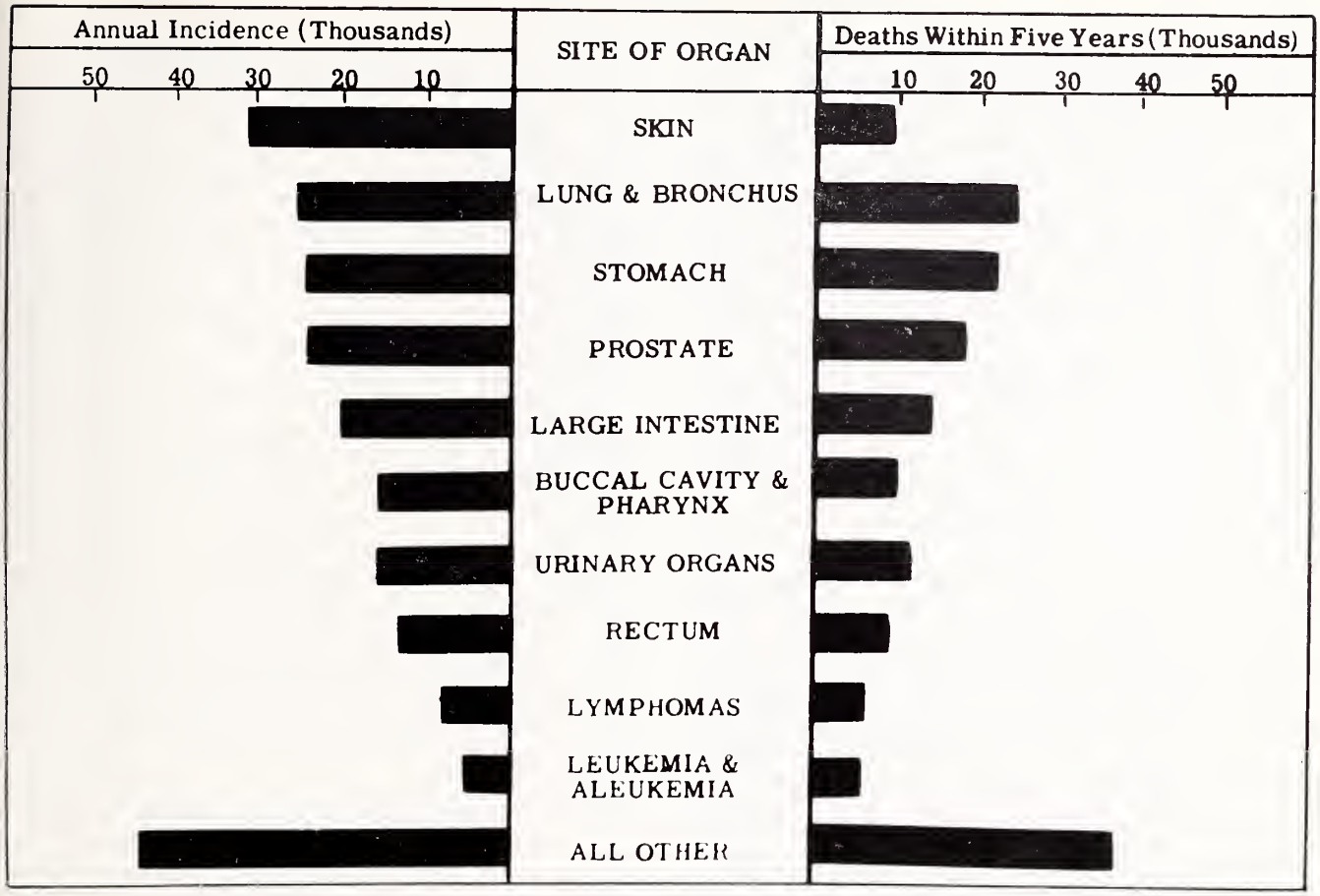

Figure 1.

ANNUAL CANCER INCIDENCES AND NUMBERS OF DEATHS WITHIN FIVE YEARS
FEMALES

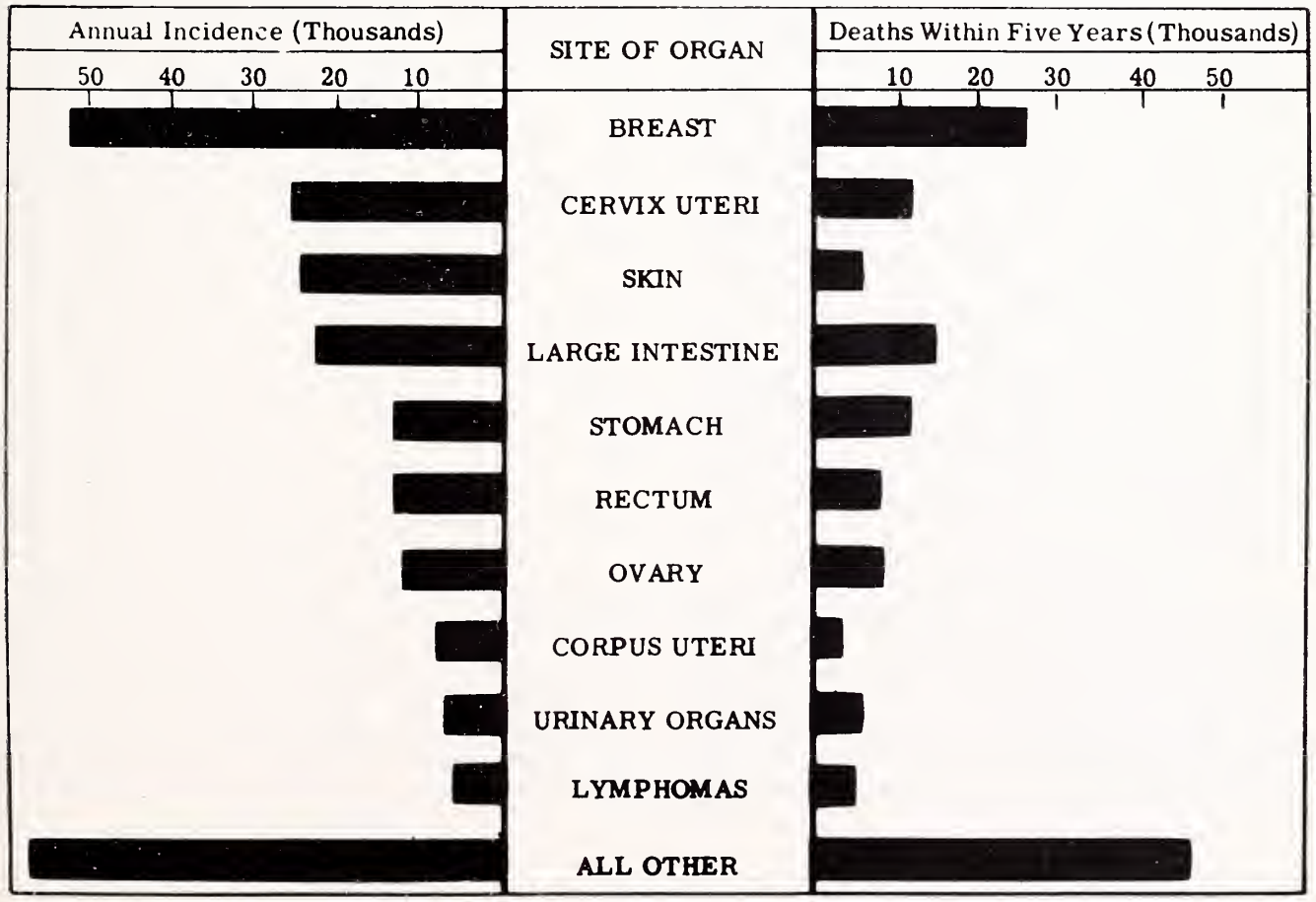

Figure 2.

reason stomach cancer is decreasing in frequency, still 93 of each 100 patients afflicted with gastric cancer die of their disease.

Figure 2 shows that among the ladies with the cancers mentioned, much the same can be said, although some of us may take comfort from the thought that women are less frequently victims of cancers in these particular sites. To balance that hope, we must bear in mind that no more than 50 of each 100 women with breast cancer are cured of their disease, and when the uterine cervix is involved, very nearly 50 of every 100 die of their disease within five years after diagnosis.

Much is being made of the unexpected fact that twice as many women as men with lung cancer live five years. The truth is, however, that among men 96 and among women 92 of each 100 with lung cancer die of their disease, the large majority of them in less than a year from the time of diagnosis. Furthermore, the frequency of pulmonary cancer in women appears to be increasing.

We shall not argue that among cancer patients the immediate cause of death may be pneumonia or some other intermediate infection (at present quite often caused by the notorious staphylococcus), by electrolyte imbalance, malnutrition, urinary obstruction or inanition, or perhaps even by cardiac arrest. Would any of these have intervened if uncontrolled cancer had not been present?

In cancer of the colon, 71 per cent of men and 65 per cent of women are dead within five years following diagnosis. Virtually identical figures are given for both men and women with cancer of the rectum.

Here are the appalling answers to the questions, "Which are these failures of cure, and how many of them are there?"

Of the 228,000 males in the United States in whom cancers were newly diagnosed in any recent year, 169,000 (74.1 per cent) will die with or of their disease within the succeeding five years.

Of the 238,000 women in the United States in whom cancers were newly diagnosed in any recent year, 146,000 (61.3 per cent) will die with their disease within the succeeding five years.

In other words, the death toll scheduled from cancers diagnosed this year is 315,000 persons—67.6 per cent, or two out of three. If the one third remaining alive at the end of five years are followed longer, it will be found that many more of them will succumb later with cancer. All of these are failures of cure.

ONLY THE EXPERTS SHOULD EXPERIMENT

A logical approach to a discussion of treatments for these patients, both curable and incurable, is an admission that maneuvers productive of enough biologic response to alter the course of the patient's disease appreciably always possess a potential for damage. Sometimes this damage is more threatening than the unaltered advance of the malignancy. One's theory that when dealing with cancer anything is worth a trial must, in humanity, be tempered by the knowledge that both curative and palliative efforts may, through failure without death, bring additional suffering or, through success, may unreasonably prolong the patient's anguish. An immediate lethal threat from treatment seems more acceptable to the patient, his family and his physician than does the thought of indefinitely prolonged misery and disability. Yet, I do not want to imply that one should accept a philosophy of euthanasia.

In no way should these statements be interpreted as condemning extended attempts at cure by surgery, such as those described by Drs. Brunschwig, Meigs, Parsons and others, even though the mortality is high. With these maneuvers, there is the expectation—even though often a remote one—of actual cure. Lest this observation be accepted by the inexperienced, the rash or the occasional surgeon as license to attempt such complex procedures, it should be emphasized that these seasoned clinical investigators are exercising very specialized talents within the narrow confines of selected cancer areas, under close scrutiny of results, in ideal surroundings and with the assistance of numerous and devoted aides, all of whom have grown to their present competence through years of concentrated study and experience. Each has reached his present admirable ability through a long series of clinical disappointments—ones in which patients bore a large measure of the ill effects. The usual practicing physician or specialist cannot expect to duplicate their results without the same personal concentration and investment, or without equal sacrifices on the part of his patients.

CHEMOTHERAPY

A distinction should be made between accepted therapeutic efforts by conservative and informed physicians, and the explorations of the clinical research worker. At present, chemotherapy is usually an influencing of the host in the hope of achieving a secondary action on the tumor. As yet unrealized is the real goal of the chemotherapist: a direct attack on the tumor without any effect on the host. This objective may never be realized by means of chemotherapy alone. There are indications that combinations of therapy, including drugs, may enhance cure. Actinomycin D in bone tumors, together with x-ray therapy, increases responsiveness in some 50 per cent of cases, whereas response to either alone is negligible.

At present, approximately 50,000 drugs are being screened each year in the national program under the Cancer Chemotherapy Service Center of the National Cancer Institute. One in 1,000 of them reach some clinical trial, and approximately 100 of them are now undergoing clinical tests. Of these, perhaps 20 are in fairly general use, dominantly in generalized tumors sometimes called hematologic

—i.e., leukemias, lymphomas and Hodgkin's disease, which make up some seven per cent of human malignancies.

There are only two malignant diseases in which convincing evidence has been presented to justify the use of chemotherapeutic agents as a part of the definitive and curative therapeutic regimen. In retinoblastoma, the rare optic childhood tumor, the use of alkalating agents in combination with radiotherapy, allows a reduction in the radiation dosage, with a resultant decrease in radiation damage to the normal ocular tissues and with no sacrifice of cure rate. The other malignancy which may be cured by chemotherapy is choriocarcinoma in women. Folic acid antagonists have been found to be particularly dramatic in their effect on this rare malignancy.

Palliative potential. The first clinical symptoms of Hodgkin's disease and lymphosarcoma may be expressed in pressure on the spinal cord or mediastinal great vessels. Alkalating agents such as nitrogen mustard promptly relieve these dangerous and uncomfortable symptoms in an appreciable number of patients. These compounds provide only temporary and sometimes inadequate relief, and they may only transiently aid equally ineffective radiotherapy. Under usual circumstances, these drugs are given as soon as the pressure phenomena are recognized. With relief of pressure, full therapeutic courses of radiation are indicated for the tumor.

Where conventional resection has failed to cure endocrine-dependent diseases such as carcinoma of the breast, hormones have found acceptance as a means of palliation. Although many estrogens and androgens are available, there are no more than slight quantitative or qualitative differences in therapeutic effectiveness among the members of each group. This is not to imply that there are no advantages of one or another of them in specific cases, but when the appropriate androgen or estrogen hormone group has been selected, many compounds are available which seem to give equally satisfactory results.

In carcinoma of the prostate, hormonal control has been recognized as the treatment of choice for some 18 years. Although it is usually effective by orchiectomy, further control by means of estrogens is helpful when the tumor has escaped the initial therapy or is widely disseminated.

Carcinoma of the lung should be mentioned, since the literature holds several publications advocating the use of nitrogen mustard, but few control data have been included in those studies. A Veterans Administration study has shown that from the onset of symptoms of lung cancer to death, the average survival in a study group of patients has been 8.7 months, and that 50 per cent of the patients have died within seven months. For these data, I am indebted to Dr. Julius Wolfe, of the Bronx VA Hospital.

In the VA Lung Cancer Cooperative Chemotherapy Study, of which Dr. Wolfe is chairman, various substances have been tried in a series of over 2,000 patients, and proper statistical considerations, double blinds, placebos and controls have been used. Essentially, the studies demonstrated that the average survival time was 70 days for all patients, including those who were given the best available medical care from the onset of palliative therapy to death, and those who were given placebos along with the usual supportive care. With chemotherapeutic agents such as nitrogen mustard, diethylstilbestrol, testosterone, progesterone, testololactone, halotestine, chlorambucil and cyclophosphamide there has been no significant difference in mean survival time. Additional drugs and palliative x-ray therapy are presently under similar comparison and evaluation. In the comparative VA study already completed, one drug did alter the duration of the patients' existence. Cortisone apparently *shortened* the mean survival time by two weeks, from 70 to 56 days. Was this through destruction of the patient's immune reactions to disease? If so, should the rationale of cancer chemotherapy be reexamined?

For the malignant lymphomas, alkalating agents have long been used and may be counted upon to produce relief of symptoms and remission of disease approximately as does radiation therapy. Nitrogen mustard and chlorambucil are most frequently used, and there is no outstanding difference between them as regards effectiveness. Such side effects as vomiting, speed of onset of action and degree of absorption determine selection of specific drugs to be utilized. In addition to these alkalating agents, the corticoids such as prednisone are used in late stages of the malignant lymphomas.

In acute leukemia, folic acid and purine analogs are standard therapy, though they are apparently more effective in children than in adults. Again the adrenal corticoids may provide clinical remissions. The combination is believed to be seldom as effective as the use of these drugs individually.

In chronic myeloid leukemia, radiotherapy has continued the first choice of many, but such chemotherapeutic agents as myleran and other alkalating agents may be effective.

In chronic lymphatic leukemia, alkalating agents serve to provide relief of symptoms and apparent remission, but they never cure the disease. The popularities of the substances vary, with chlorambucil presently favored for its ease of administration rather than for any enhanced effect.

For multiple myeloma, urethane seems as efficacious as any of the other substances presently available.

In carcinoma of the ovary, particularly with disseminated abdominal disease, the alkalating drugs serve to provide relief from ascites and many of the prolonged, distressing symptoms.

For effusions resulting from malignant implants in serous cavities, radioisotopes have been popularized. Their gradual replacement by the more easily managed chemotherapeutic agents is under way. Direct instillation of such agents as nitrogen mustard, thiotepa and others is useful for symptomatic control. They alter the relentless course of the disease in no way, however.

If consideration is limited to the circumstances in which drugs can be counted upon to give satisfactory responses in appreciable numbers of patients, the above listing includes about all of the reliable applications of cancer chemotherapy. Carcinoma of the gastrointestinal, urinary, pancreatic, cerebral, uterine and cervix areas, malignant melanomas and the various sarcomas are under intensive study, for they constitute a challenge. These have consistently refused to respond to chemotherapy in any appreciable numbers. There have been dramatic, isolated instances of response in all of these groupings which have served to provide stimulus in an otherwise discouraging search.

In the VA Adjuvant Surgical Cooperative Chemotherapy Study, cancers of the lung, stomach, colon and rectum have been subjected to accepted radical surgical excision, with patients strictly categorized in "curative" and "palliative" treatment groups. In 29 months, 3,970 patients were screened for study. Under statistical randomization control, half of 1,777 patients have undergone chemotherapy plus resection. In lung patients, nitrogen mustard was used, and in patients with cancers of the stomach, colon and rectum, thiotepa was utilized. In the initial phase of the study, full therapeutic doses were given. The efficacy of chemotherapeutic agents *"per se"* is of less concern than is determining whether such chemotherapeutic materials can destroy minimal numbers of tumor cells in the body —i.e., cells possibly freed and spread by operative manipulation, but not yet established and therefore perhaps more susceptible to cancerocidal substances or host-resistance factors. Any benefit anticipated from chemotherapy would probably be evident only in patients with minimal residual disease following surgery. "Curative" cases, if properly classified, should survive at least two years under most circumstances. The study has been in existence little longer than that. Although trends in survival might be interesting and even now might be pertinent, no significant difference in survival is yet evident between control patients treated by surgical resection and the similarly selected and followed study series that received the combination of surgery plus chemotherapy. We cannot present specific answers in this preliminary report.

Figure 3 shows the two important findings that have become evident. Thus far, the study has disclosed that the risks of mortality from major surgical procedures on cancer patients are greater than the favorable reports in the literature might lead us to believe.

Second, the study has emphasized that stress from full doses of cancer chemotherapeutic agents in addition to surgery may appreciably increase the risks of mortality and morbidity. A thorough

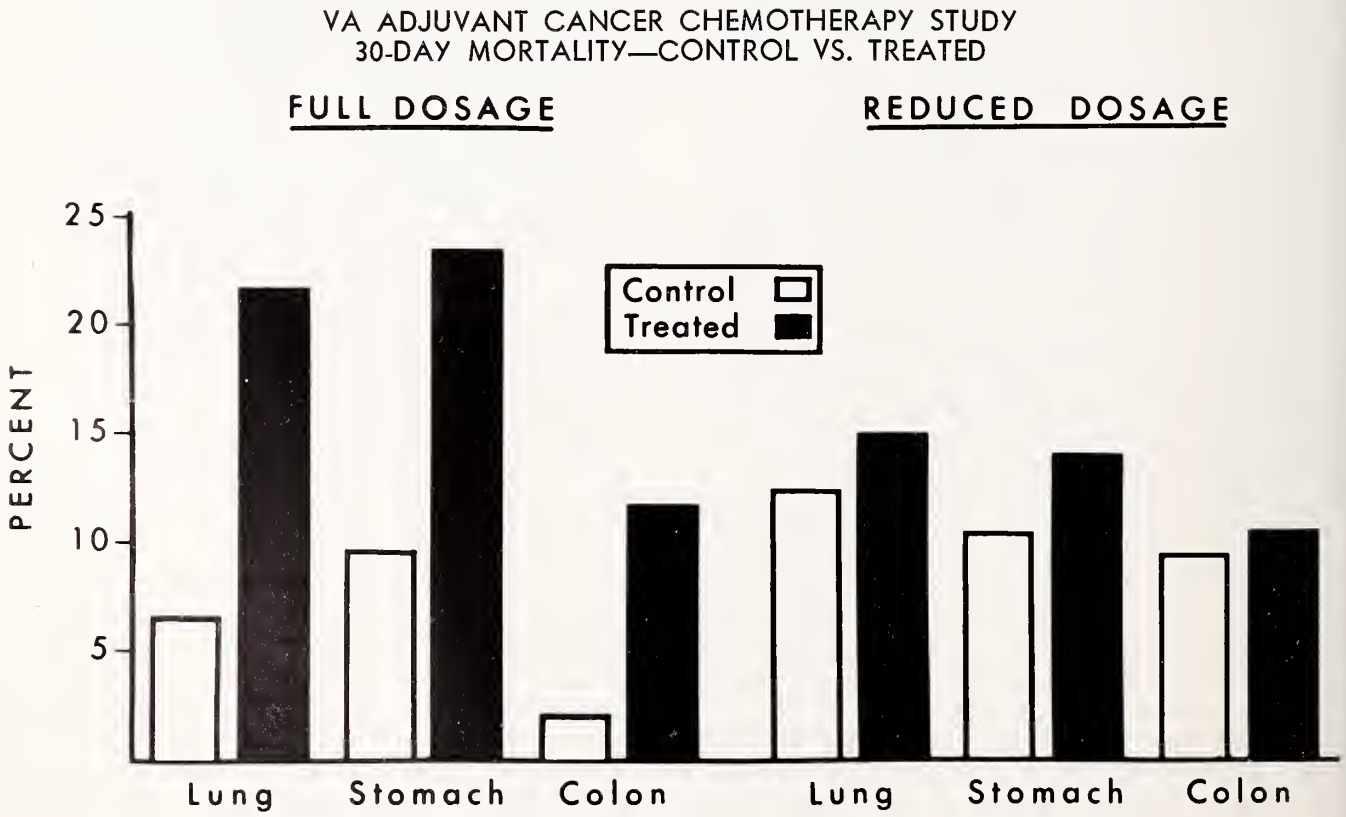

Figure 3.

search reveals no defects in randomization procedure. The disparity between controls and treated patients appears in every cancer site category of the study. It persists despite adjustments for ages of patients, extents of disease, preoperative evaluations of risk, the variable death rates of different hospitals, and every other factor in the data available for analysis.

A similar study being conducted by a group of university hospitals has not demonstrated this difference in postoperative mortality between the control and the treated cases. However the mortality rate for both treated and control cases in the university program is essentially the same as the one for the cases in the VA study treated with surgery plus chemotherapy.

EARLY POSTOPERATIVE MORTALITY IN THE VA STUDY

Early in the study, there were indications that the use of nitrogen mustard and thiotepa was having an adverse effect upon survival during the first 30 postoperative days. Data for the first six months showed that during the first postoperative month, deaths were three times more numerous among lung surgery patients treated with nitrogen mustard than among those treated with surgery alone. It was also observed that thiotepa-treated cases in the gastric series exhibited a higher mortality than the gastric controls, but only in the lung cancer group was the differential sufficiently great to rule out chance as a cause.

After eight months, the use of nitrogen mustard and thiotepa was discontinued because of the persistence of what appeared to be an adverse drug effect. The accession of lung, stomach, and colon-rectum patients in the "surgery only" or control treatment category was continued, and later an unknown and inert substance (physiologic saline) was substituted for the abandoned drugs. The experiment was conducted on that basis for a period of six months. Then, in January, 1959, the use of active agents (nitrogen mustard and thiotepa) was resumed at reduced dosage levels (three-quarters of the original), and the study has been continued up to the present time. This last phase of the study is being conducted on a double-blind basis, with the control patients receiving a saline placebo. The "treatment" or "control" status of each of the various patients in the present phase of the study continues known only to the statisticians until the individual patient dies and his record summaries are placed in the statistical control center.

In all cancer study sites, 30-day surgery mortality data have been provided by 18 of the hospitals for

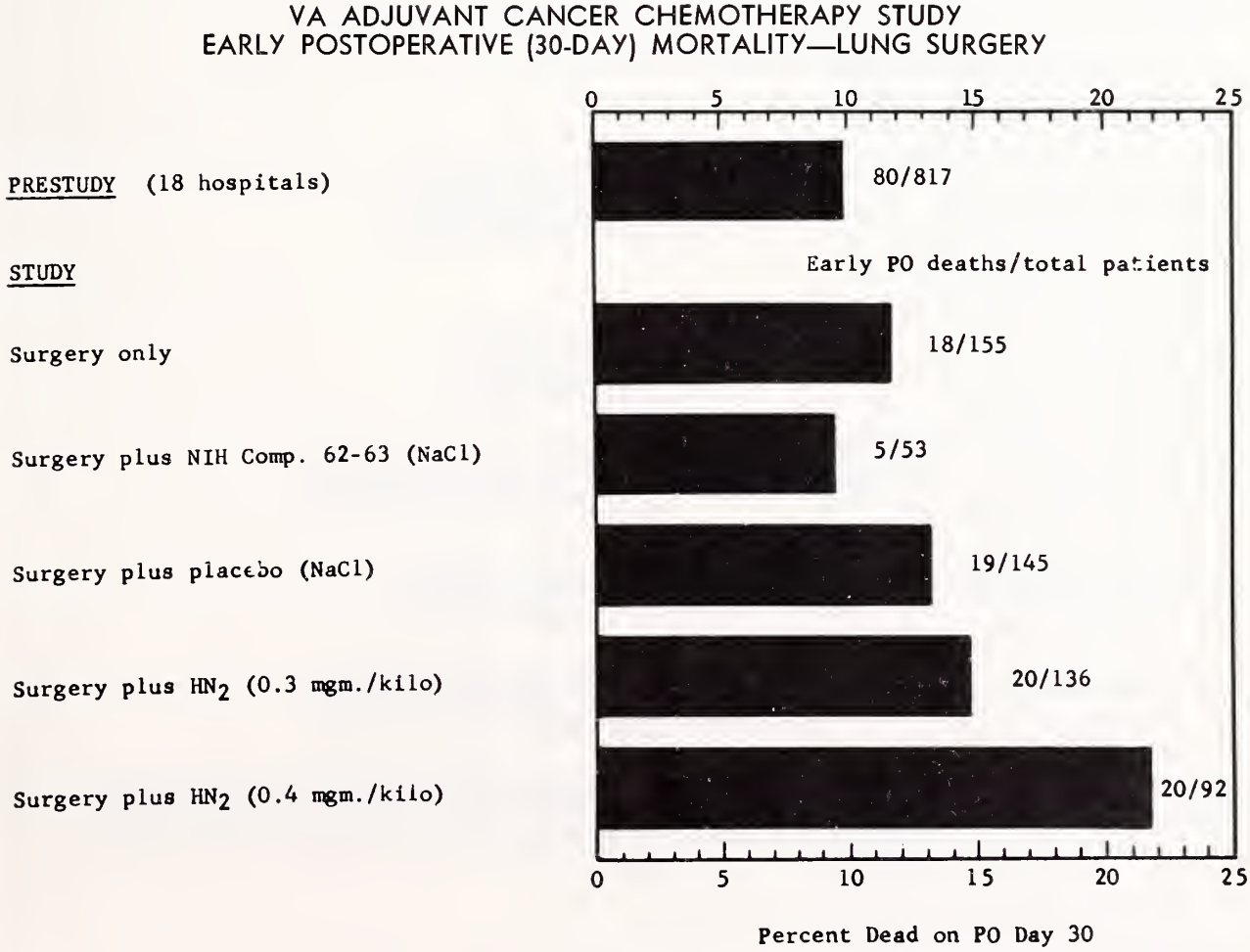

Figure 4.

the five-year period preceding the study. Figure 3 summarizes this information for each site.

In lung cancer patients, the early postoperative mortality among patients who received surgery alone was 11.6 per cent. The mortalities for the various treatment categories range from 9.4 per cent for patients who received inert compound to 21.7 per cent for patients who received the full dosage of nitrogen mustard—an absolute difference of 12.3 per cent (Figure 4).

Experience with the various treatment regimens under study following gastric resection is summarized in Figure 5. The results are quite similar.

The early postoperative mortality experience for various regimens of adjuvant therapy in cancer of the colon and rectum is summarized in Figure 6. Again, the highest mortality occurred in the group that received the full dosage of chemotherapy, but in this instance the magnitude of the excess is of a statistical order that may be due to chance. This is the most controversial group, since the results from conventional resectional surgery in colon and rectum cancer are better, insofar as survivals are concerned, than are those from surgery for either lung or gastric malignancies. In fact, results are good enough to warrant asking whether *any* procedure as threatening as chemotherapy is at present should be used as a supplement to surgery.

COMPLICATIONS

An obvious question concerns the possible relationships between specific complications and the administration of the study drugs. The complications reported to the statistical center have been coded and summarized. Although this seems to have been a straightforward approach, it has misleadingly simplified a very complex situation. The major problem is definitions for complications. Surgeons vary as to what they report, even in the environment of a controlled study. Further problems result from the fact that in charted listings, serious complications and minor or even trivial difficulties are equally weighted—i.e., considered of equal importance. Besides, instead of having just one complication, a patient is likely to have multiple complications of varying degrees of severity producing ever-changing influences upon his condition. It was not entirely unexpected that complications and causes of death reported among all patients in the full-dose trials showed greater frequencies of infections, including pneumonia and cardiovascular complications, following combined surgery and drug treatment than following surgery alone. An unexpected excess of thrombo-embolic problems, however, was found to have occurred also in the drug-treated patients.

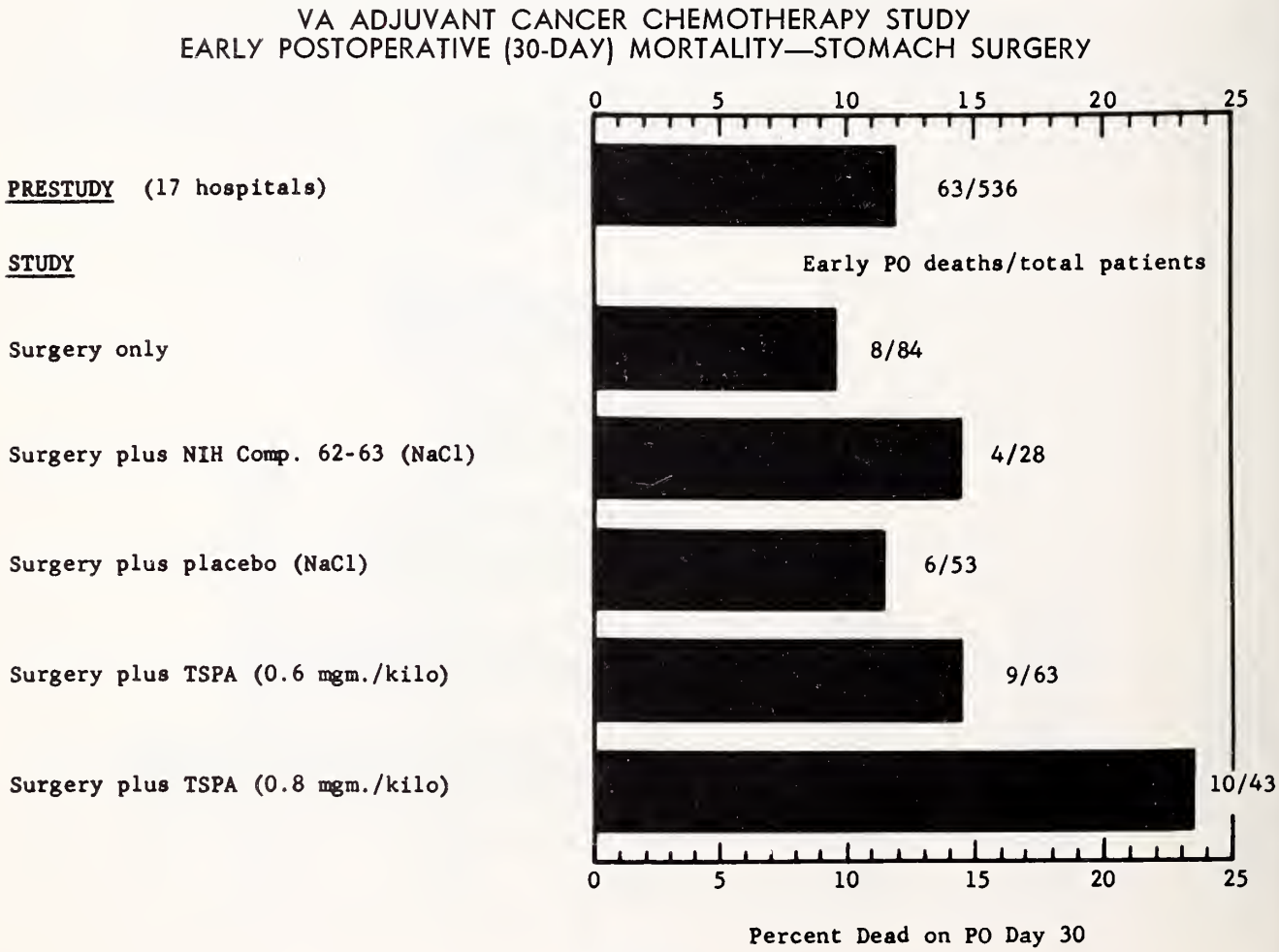

Figure 5.

Drug-treated lung cancer patients in the full-dose series (Table 3) showed complications in 57.1 per cent, as compared with 43 per cent of the controls. With reduction in dose, the proportion of drug-treated cases suffering complications dropped to 44.1 per cent—a rate approximating that of the controls.

TABLE 3

VA LUNG CANCER STUDY

	Full Dose		Reduced Dose	
	Treated	Control	Treated	Control
Number of Reports	91	79	102	112
Without Complications	39	45	57	66
With Complications	52	34	45	46
Per Cent of Reports				
With Complications	57.1	43.0	44.1	44.1

Drug-treated cases in the stomach-cancer series showed a similar excess of complications in the full-dose series—i.e., 59.5 per cent among the treated and 44 per cent among the controls (Table 4). There was a similar drop to the level of the controls when the drug dosage was lowered.

TABLE 4

COMPLICATIONS

VA STOMACH CANCER STUDY

	Full Dose		Reduced Dose	
	Treated	Control	Treated	Control
Number of Reports	42	50	46	38
Without Complications	17	28	27	20
With Complications	25	22	19	18
Per Cent of Reports				
With Complications	59.5	44.0	41.3	47.4

Experience with complications in colon and rectum cancer patients (Table 5) was different in that 52.5 per cent of treated cases developed difficulties, as compared with 45.3 per cent of the controls, but following reduction of chemotherapeutic drug dose, complications among the controls and the treated patients declined in approximately the same degree. In other words, there is no evidence to show that lowering the drug dosage reduced the incidence of complications. Perhaps these findings imply that bowel resection is less taxing than are major procedures in the upper abdomen and chest.

Clean-cut manifestations of drug toxicity such as bone-marrow depression have been rare. It ap-

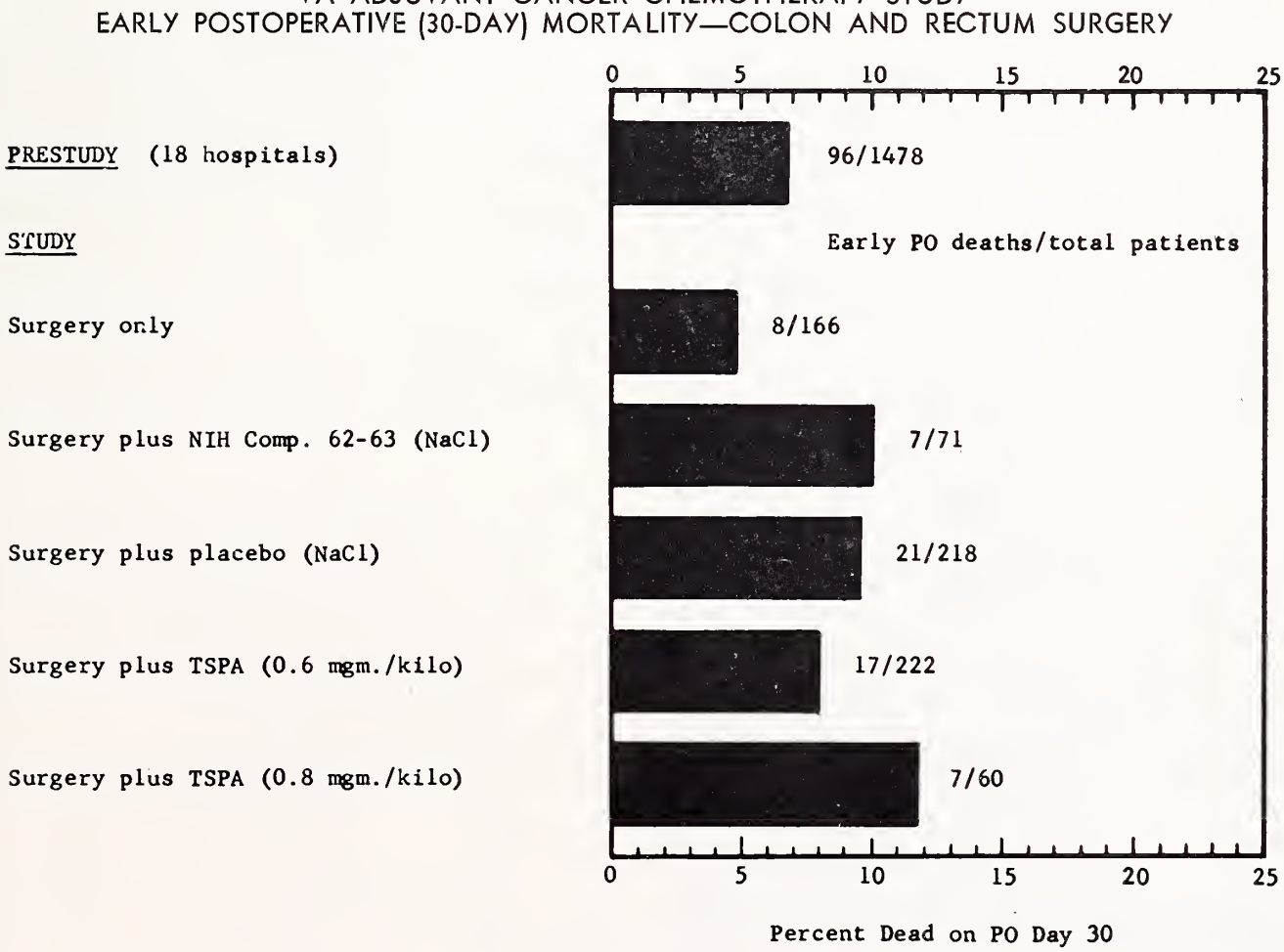

Figure 6.

TABLE 5

VA COLON-RECTUM CANCER STUDY

	Full Dose		Reduced Dose	
	Treated	Control	Treated	Control
Number of Reports	59	53	158	167
Without Complications	28	29	85	101
With Complications	31	24	73	66
Per Cent of Reports With Complications	52.5	45.3	46.2	39.5

pears significant that whereas extreme leukopenias were unusual, it was common to find among the treated patients a failure to obtain the postoperative leukocytosis expected as a normal response to the trauma of a major surgical operation. It is our impression that the chemotherapeutic substances sharply diminish or suppress the ability of patients to respond favorably when subjected to stresses such as major surgery.

DISCUSSION

To date, there appears little or no substantial proof that chemotherapeutic agents such as those used in these studies on lung, stomach and colon-rectum cases are particularly beneficial to patients. Yet, sufficient numbers of patients have not been followed long enough for us to reach any final conclusions.

It can be assumed that the standards of care given patients screened for and entered in the studies would have been maintained regardless of whether or not studies were in progress. Close to the consciences and hearts of the investigators are the discomfort and, indeed, the threat to life that inevitably accompany the use of potent toxic agents. It is possible that a very few patients have actually been harmed, as evidenced by the increase in 30-day mortality among treated cases in the original full-dosage schedule of this program. Some may argue that these patients might not have survived long in any case. Nevertheless, there were deaths among the patients in this group in excess of the mortality for such patients in the same hospitals prior to the inauguration of the study and in excess of the mortality among control patients on whom chemotherapy had not been used. It is to the credit of the participants in the program, and particularly of the alert biometricians, that this increased mortality was recognized and the necessary changes initiated. These problems could not have been seen promptly, if at all, in any small or uncontrolled study, and may even now be going unnoticed in lesser individual patient series, however critically followed. We hope that this observation will be interpreted as a warning.

Of what benefit, then, is this program to the patients? It is our opinion that the cancer chemotherapy program is providing doctors and their aides, not alone in VA but throughout the great breadth of the National Cancer Chemotherapy Service Center Program, with greater knowledge, enhanced facilities and deeper insight for use in the improvement of patient care.

CONCLUSIONS

A review of the facts and opinions that have been stated here must lead one to conclude that:

1. Of patients whose cancers are diagnosed this year, two-thirds are destined to die with or of their disease within five years.
2. These patients are failures of cure, but they often may be provided long intervals of comfortable, productive and rewarding life.
3. Present therapeutic and palliative methods for cancer are exacting an appreciable toll in patient morbidity and mortality. For each patient so involved, the cost is 100 per cent.
4. The areas for present clinical application of chemotherapy have been mentioned. In bowel and rectal cancer, a justification for the use of chemotherapy is still being sought.
5. Efforts to broaden the applications of chemotherapy and to improve its effectiveness must be carefully controlled, and it must constantly be recognized that such studies exact some cost in morbidity and mortality regardless of how strictly they are managed.
6. Chemotherapy provides useful maneuvers that we can add to our wide range of palliative therapies for malignancy.
7. Physicians must strive to gain full knowledge of neoplasia as a group of diseases, and of the procedures available for the treatment of the various stages of each one. Further, they must grasp the corollary that a full measure of benefit is realized only if and when a correct assay has been made of the disease, its stage of development and its victim.
8. The measure or combination of measures for treatment must be fortunately and wisely selected, timed and applied.
9. Although question may be raised as to *what* should be done, there is no cancer patient of whom we can say, "*Nothing* can be done."

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing on page vii in this issue:

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Bladder Neck Obstruction in Children

B. J. BEGLEY, M.D., and R. H. FLOCKS, M.D.

IOWA CITY

THE ONSET of bladder neck obstruction is often insidious, for an increased muscular activity may mask the obstructive nature of the condition. Even later, the symptomatology is masked by a sensory loss that often occurs with long-standing dilatation and atony of the urinary passageways. Cloudy urine, painful urination, the distress of burning and smarting, suprapubic and flank pain, chills and fever—all these indications of infection are often evident only after rather marked obstructive changes have occurred, and after there has been damage over a long period of time. Infection is, then, but a complication—and often a late one—of bladder neck obstruction.

But if pain and infection are not good indices on which to base early diagnosis, then what is? Let us consider briefly the mechanism of urination and of obstruction. What happens?

We know that urination in infants is a reflex mechanism whereby distention of the urinary bladder provokes motor impulses that cause the bladder to contract. At the same time, or immediately before, the floor of the bladder neck region has descended and has smoothed out this area, making a straight passage from the bladder to the external sphincter in the male, and from the bladder to the entire urethra in the female. Then, the resistance posed by the diameter, elasticity and length of the urethra is overcome by the force or pressure exerted by the contraction of the bladder. The accessory mechanisms in urination are: (1) fixation of the diaphragm, (2) flexing of the abdominal musculature, and (3) relaxation of the pubococcygeus and levator ani muscles. (See Table 1.)

If the bladder neck or the posterior urethra has a decreased diameter, or has lost elasticity as a result of fibrosis or muscular hyperplasia, more force must be exerted by the bladder to overcome the resistance. The force of the urinary stream may still be good, and complete evacuation of the bladder may be accomplished. As more force is exerted by the bladder to overcome the resistance, there is hypertrophy of the bladder. This has four effects: (1) it thickens the bladder wall; (2) it decreases the capacity of the bladder; (3) because of the spacing of the muscle fibers of the bladder, it causes ridging and pitting, trabeculation, cellules and diverticula of the wall; and (4) the increased motor activity causes irritability of the bladder, and this irritability leads to inflammation.

Inflammation and decreased bladder capacity produce increased urinary frequency. Increased frequency, then, is the first symptom of bladder-neck obstruction. In older children—beyond the age of three or four years—cerebral inhibition can somewhat dampen the increased frequency, and it is only when cerebral inhibition is diminished, as during sleep, that the irritability leads to the expulsion of urine—i.e., nocturnal enuresis. Therefore, nocturnal enuresis is the commonest symptom of early bladder neck obstruction (Table 2).

It is only later (1) that the diaphragm and abdominal muscles must be called upon to help more than usual, and the child has visible straining to urinate, with prominent distended facial veins and purpling of the face, a straining that may result in abdominal herniae; (2) that the stream is decreased in size and force as the bladder pressure

Dr. Begley is an assistant professor, and Dr. Flocks is head of the Department of Urology at the S.U.I. College of Medicine. This presentation was made in Iowa City at a postgraduate short course in urology and in Des Moines at Mercy Hospital Medical Day, last fall.

TABLE 1

NORMAL BLADDER NECK PHYSIOLOGY

Resistance —	Diameter Elasticity Length	Bladder neck and urethra
Force	1. Detrussor contraction pressure 2. Diaphragm fixation 3. Abdominal muscles flexion 4. Perineal muscles relaxation	
Urination	1. Good stream 2. Complete evacuation	
Anatomic Effect	1. Smooth mucosa 2. Normal capacity 3. No irritation or inflammation	
Functional Effect	$\frac{\text{24 hr. volume}}{\text{Bladder capacity}}$ = Normal frequency	

TABLE 2

PHYSIOLOGY—EARLY OBSTRUCTION

Resistance—Increased	1. Less diameter 2. Fibrosis
Force—Detrussor pressure increased	
Urination—Normal	
Anatomic Effect—Bladder Hypertrophy	1. Thickened wall 2. Decreased capacity 3. Trabeculation 4. Irritation and inflammation
Functional Effect	$\frac{\text{24 hr. volume}}{\text{Decreased capacity}}$ = Enuresia and increased frequency

can no longer efficiently overcome the resistance of the obstruction; (3) that the inflammation, cellules, diverticula or bladder containing residual urine acts to attract infection; and (4) that the bladder decompensates, fills with urine and cannot exert adequate pressure to expel all of it. The residual urine, with infection present, produces burning and smarting or pain on urination, suprapubic pain, and chills and fever, or (5) the increased pressure in the bladder may lead to incompetence of the ureteral orifices and resulting pyeloureteral reflux (Table 3).

TABLE 3

PHYSIOLOGY—INTERMEDIATE OBSTRUCTION

Resistance—Increased	
	1. Less diameter
	2. Possible fibrosis progression
Force	1. Detrussor pressure increased
	2. Accessory mm. overactive but inefficient
Urination	1. Decreased stream size and force
	2. Residual urine
Anatomic Effect	1. Secondary infection
	2. No. 1 leads to fibrosis
	3. Incompetent ureteral orifices
	4. Possible Herniae
Functional Effect	1. $\frac{\text{24 hr. volume}}{\text{Decreased capacity}}$ = Enuresia and increased frequency
	2. Burning and smarting
	3. Painful urination
	4. Suprapubic and flank pain
	5. Chills and fever

Infection causes further fibrotic obstruction at the bladder neck and may cause fibrosis of the bladder wall, thus decreasing the elasticity of the bladder and robbing it of its ability to expel urine. Ultimately, infection involves the kidneys, leading to fibrous replacement of the nephrons and renal failure. If pyeloureteral reflux has occurred, the increased bladder pressure will be transmitted to the ureters and the renal pelves and calyces, here again first producing hypertrophy to overcome the resistance, then causing inflammation predisposing to infection, and later bringing gradual decompensation, with atony and the resultant increases in both length and diameter, giving us the advanced damage of tortuous, dilated hydroureters and hydronephrosis. By definition, this hydronephrosis or pressure atrophy of the kidney substance leads to renal failure, azotemia, uremia and death, if not reversed in time (Table 4).

If the significance of increased frequency and enuresis have not been realized, then the late effects, especially those of pressure atrophy, can progress insidiously without specific symptomatology, so that when first seen, the child may have only the non-specific complaints associated with renal failure and acidosis. These include weakness,

TABLE 4

PHYSIOLOGY—LATE OBSTRUCTION

Resistance	Static or progressive
Force	Bladder decompensation
Urination	1. Large residual
	2. Overflow incontinence
	or
	3. Complete retention
Anatomic Effect	1. Large, thin, atonic bladder
	2. Pyelo-ureteral reflux
	3. Hydroureter, hydronephrosis
	4. Infection, fibrosis
Functional Effect	1. Incontinence
	2. Azotemia
	a. Anemia
	b. Acidosis
	c. Malnutrition
	DEATH

fatigue and headache, all resulting from the anemia of azotemia; and the anorexia, nausea, vomiting or abdominal discomfort associated with the uremic state. If only one case in eight of increased frequency or enuresis turns up a bladder neck obstruction, then the time, effort and expense of obtaining that one renal salvage is fully justified. We are dealing with a life-threatening situation—renal failure. Only in this way can we find these children before the later complications have caused permanent damage. Figure 1 is a cystogram that illustrates the insidiousness of this condition.

Figure 1. Delayed cystogram of 22-year-old white male showing large, irregular trabeculated bladder with diverticula and bilateral ureteral reflux. At the age of five years, he had had "bladder infection." He presented at age 22 years, azotemic, and a transurethral resection was done. He voided well and emptied, but returned to the hospital at 23 years of age, and died of renal insufficiency.

The various types or causes of bladder neck obstruction in children are listed in Table 5.

FINDINGS IN BLADDER NECK OBSTRUCTION

Physical Findings. 1. Direct observation of a poor urinary stream or marked straining on urination. The mother may not be a competent judge of a good urinary stream and should not be relied upon.

2. A visible, palpable or percussible distention of the bladder, if the residual urine exceeds 200 cc.

3. Palpable renal or ureteral masses if there is marked obstruction, or a tenderness in the abdominal or flank areas if there is infection.

4. Neurologic deficits. Poor or incompetent anal sphincter tone; sensory loss in the "saddle" region. (Or lower-extremity sensory or motor loss, or anomalies such as club feet are indicative of a neurogenic dysfunction, either congenital (myelodysplasia) or acquired by traumatic or disease processes.)

5. Visual evidence of obstruction on cystoscopy. (The commonest finding is trabeculation of the bladder, and the actual cause of the obstruction may be seen. However, bladder-neck obstruction may be inferred from the history and findings of obstructive phenomena of the proximal parts, without one's actually visualizing the obstruction cystoscopically.)

TABLE 5

TYPES OF BLADDER NECK OBSTRUCTIONS IN CHILDREN

I. Mechanical
- A. Intrinsic*
  1. Fibromuscular contracture of bladder neck
  2. Muscular hyperplasia of bladder neck
  3. Hypertrophy of verumontanum
  4. Posterior urethral valves
  5. Traumatic stricture of bladder neck and posterior urethra
  6. Bladder tumors and polyps
  7. Prostatic enlargement, including lobar enlargement, bars, neoplasms and cystic structures
  8. Trigonal hypertrophy or veils
  9. Ureterocele
  10. Bladder stones and foreign bodies
- B. Extrinsic
  1. Gynecologic lesions
     - a. Hydrocolpos
     - b. Hematocolpos
     - c. Foreign bodies
     - d. Uterine and ovarian masses
  2. Rectal lesions
     - a. Organic masses
     - b. Fecal impaction

II. Functional
- A. Myelodysplasia
- B. Acquired neurogenic bladder dysfunctions

* Although strictly not bladder neck obstruction, the same end results can occur from stricturing along the urethra, especially at the external meatus, in both boys and girls.

At times, obstruction must be ascertained from the visual and palpatory findings at the time of surgery—either open or, as Emmett has stated, after the first cut or two transurethrally.

Urinary Findings. 1. Pyuria, bacteriuria, with temperature elevation if there is a complicating upper-tract infection.

2. The presence of residual urine. (Anything over 15-20 cc. is significant in a child.)

Radiographic Findings. Radiographic evidence of urinary-tract distention and dilatation. (This ranges from a distended bladder with trabeculation or diverticula, to the presence of hydroureters or hydronephrosis.)

Renal Failure Findings. The most obvious is azotemia, indicated by a blood urea nitrogen of over 20 mg. per cent, or by a non-protein nitrogen (NPN) blood level of over 40 mg. per cent. However, dehydration or absorption of blood from the gastrointestinal tract can raise the former to 50 mg. per cent and the latter to 70 mg. per cent at times. Therefore, concurrent determination of creatinine will distinguish renal azotemia, for creatinine levels do not tend to rise in the extrarenal situations mentioned. The phenolsulfonphthalein (PSP) test is an excellent quantitative measure of renal function. It will detect minor renal impairment when the blood urea nitrogen level and the intravenous pyelogram may still appear normal. Repeat PSP determinations gauge renal progress, for better or worse.

Other suggestive findings are a low fixed specific gravity of the urine, proteinuria, pallor, malnutrition, bony deformities secondary to demineralization, unexplained anemia and metabolic acidosis.

DIAGNOSIS OF BLADDER NECK OBSTRUCTION

The diagnosis of bladder neck obstruction depends upon numerous factors.

1. *The History.* A daily record of numbers of urinations may be helpful. The average frequency pattern by ages is shown in Table 6.

2. *The Physical Findings.* These may be meager in early cases, as has been said earlier in this paper.

3. *The Laboratory Findings.* These also have been discussed. However, it should be kept in mind that up to 75 per cent of the renal substance

TABLE 6

AVERAGE URINARY FREQUENCIES*
NORMAL INFANTS AND CHILDREN

	Voidings/24 Hours
During the first year	16-20 x
During the second year	12 x
During the third year	10 x
During the fourth year	9 x
By the twelfth year	4-6 x

* Modified after Campbell.

can be damaged before there is an elevation in the blood urea nitrogen. The newer contrast media may also concentrate and give fair films despite renal damage. In doubtful cases, the phenolsulfonphthalein test is the most quantitative and most accurate.

4. *Intravenous Pyelography.* This procedure is important and should precede any instrumentation. If veins are unavailable, the medium can be injected intramuscularly. The plain film may indicate demineralization suggestive of renal failure. Spina bifida may be present. Yet, one-third of normal children are said to have defects in the lamina, and this finding by itself has little significance. Opaque stones, tumor masses, and enlargements of the kidneys or bladder may be seen. Hydronephrosis, hydroureter, distended bladder, poor concentration, delayed excretion and emptying, and diverticula are obvious findings. Residual urine can be determined by obtaining a post-voiding film. At times, voiding urethrograms can be obtained by having the child void at the time of the last film of the pyelogram series. Ureteroceles and tumors may be seen on the cystogram. Grossly indeterminate pyelograms, azotemia above 35 mg. per cent BUN, and lack of ureteral reflux on the injection cystogram may make it necessary to do retrograde pyelograms to visualize the upper urinary tract, but this is not often necessary. Dehydration, catharsis, air contrast by ingestion of a carbonated beverage, and oblique films are all aids to better visualization.

5. *Residual Urine Determination.* In addition to a direct catheterization determination, one can estimate residual urine on the basis of the intravenous pyelogram. One can determine it when a suprapubic catheter is in place by clamping the catheter and then, following urination, draining the catheter. One can also detect it by the floating, or ascendent, lipiodol test at the end of urethral instrumentation. Five cubic centimeters of lipiodol, a 10 per cent iodine solution in poppy seed oil, is instilled into the bladder. This solution is lighter than urine and floats to the top of the bladder. Normally, it is eliminated within 24 hours. An x-ray will reveal it in the bladder, or even in the kidney, 24 hours later, or even up to a week later if there is residual urine. The test is of value in children who cannot void on command. It should be mentioned that some children have "false" urinary retention after instrumentation because of their fear of painful urination. Phenergan, 12.5 to 25 mg., or Sparine, 10 to 25 mg., will allay this anxiety and allow elimination of this confusing factor.

6. *Retrograde Cystography.* The bladder filled with contrast medium via the urethral meatus will give a urethrogram and cystogram. Filling the bladder by a catheter allows prior determination of residual urine, and the contrast medium used is not so likely to be voided immediately because there is less tendency for bladder spasms. Delayed films through one hour and/or voiding films are necessary at times, to demonstrate ureteral reflux. In addition to demonstrating reflux, they permit the size and contour of the bladder to be seen, and show the changes that have resulted from bladder damage.

Cystograms should be done prior to contemplated retrogrades, for visualization in the presence of reflux may be sufficient to remove the need for retrogrades. Surprising hydroureter is sometimes demonstrated in retrograde cystography when the intravenous pyelogram appears normal. Cystography should not be done immediately following intravenous pyelography, for excreted medium in the ureter or kidney cannot be distinguished from reflux.

7. *Urethrocystoscopy.* With rare exceptions, general anesthesia is needed. Bladder changes of obstruction are seen, and the actual lesion may be evident. However, the bladder neck and posterior urethra may be very difficult or impossible to see well. These small urethras require the use of very small instruments, and the urethra tends to "fall in," obscuring the visual field. The passage of the instrument also allows calibration and estimation of the diameter of the urethra, thus revealing urethral strictures. Anesthesia makes good bimanual examination possible.

8. *Cystometrography.* This procedure is difficult in children because of their restiveness and poor cooperation, and the results are equivocal. We have found it of limited value in patients of this age group.

With early bladder neck obstruction, one is hard put at times to make a decision regarding surgery. It will often be necessary to follow these children with repeat studies, especially intravenous pyelograms, cystograms and residual urine determinations, before one feels that he has a clear-cut indication regarding surgery. The parents and the referring physician should be made aware of this fact and of the need for continued observation.

THERAPY

Therapy is dependent upon the cause of obstruction. Removal of extrinsic causes may solve the problem. The therapy of myelodysplasia has poor results in many instances because of the associated incompetent external sphincter and other neurologic deficits. Here, the least disturbing procedure should be tried first—usually transurethral resection.

Our remarks will be directed to modes of therapy for the relief of mechanical intrinsic obstruction. It is very important for one to administer appropriate drugs and large amounts of fluids in the active and strenuous treatment of the frequently concomitant infection.

Outmoded or unsatisfactory methods include dilatation and perineal exposure. Dilatation, either intermittent or by inlying catheter, gives very shortlived results and must be continued *ad infinitum,* frequently requiring anesthesia. The perineal route is mentioned in older texts, especially for

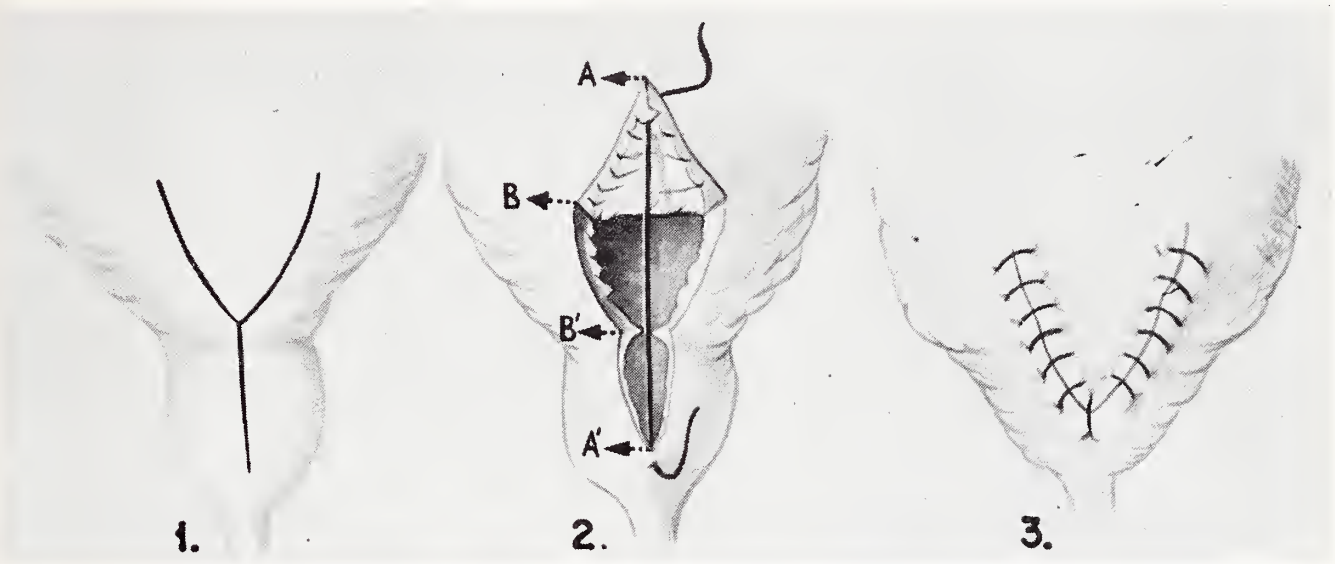

Figure 2. The Young-Goebel transvesical approach. This is the most frequently used procedure.

valves, but has been largely supplanted by the abdominal exposures.

Transurethral resection is possible, but does not enjoy the vogue that it did some 10 years ago. Unfavorable factors in its use include the limiting size of the urethra, especially in the male. Indeed even the firm advocates of transurethral resection limit its use in male children to those beyond two years of age. Perineal urethrostomy in the male bypasses the narrow anterior urethra, but even the bulbomembranous urethra may be quite small. The complications of urethral stricture, vesicovaginal and urethrovaginal fistulae, damage to the ureteral orifices, and secondary scarring or inadequate removal of obstructive tissue limit its utilization. The non-availability of the lower ureteral segments for inspection and possible concomitant surgery limits the usefulness of the transurethral approach.

The conventional transvesical approach limits vision, and does not allow easy access to the deeper portions of the prostatic urethra, where scarring, valves or verumontanum hypertrophy may be most severe. Millin, Burns, Wilson and Lich advocated a vertical incision through the roof of the prostatic urethra and bladder neck, with removal of obstructive tissue. B. W. Young used the same incision, but closed it transversely, and later he and Goebel described the Y incision with a single limb cut vertically through the roof of the prostatic urethra, and forked limbs extending up onto the anterior bladder wall, creating a V flap of anterior bladder wall. The obstructive tissue was removed from the prostatic cavity, and the V flap was then advanced and approximated down to the apex of the prostatic incision, creating a V closure and bringing elastic bladder wall down into the roof of the prostatic cavity to enlarge its diameter. This is the most frequently used procedure, and has given good results in the hands of many. This technic is illustrated in Figure 2. When a more extensive wedge of anterior prostatic urethra must be excised, Hudson and Scardino have used a transverse flap created from the bladder wall and swung into the excised defect in the prostatic cavity.

There are certain instances, usually in the adult following transurethral prostatic resection, where the entire prostatic cavity and the periprostatic region are densely scarred-in and poorly visualized for suturing. This can also occur in children following transurethral procedures, trauma or previous unsuccessful Y-V plasty. For this situation, a vertical incision is made through the roof of the prostatic urethra and the anterior bladder wall. The fibrosed tissue is excised, and a posterior wedge may be removed if need be. Then a flap to cover the prostatic urethra is created by a circular incision starting from the vertical bladder incision

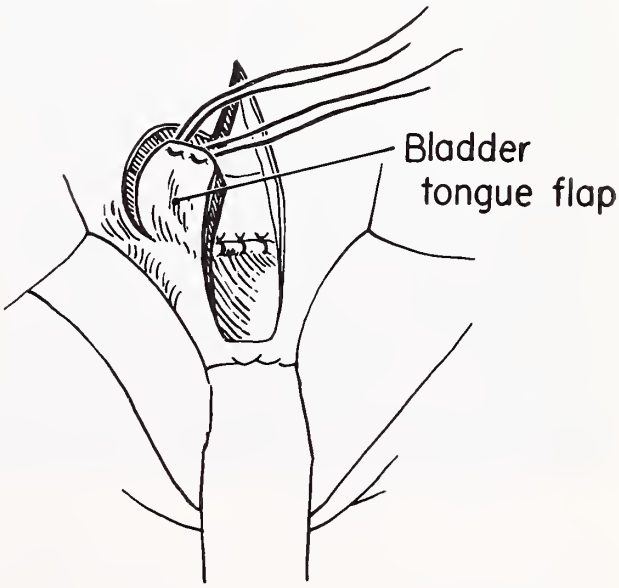

Figure 3. Technic for use following transurethral procedures, trauma or previous unsuccessful Y-V plasty.

and extending laterally and down towards the bladder neck. Two sutures of No. 1 chromic catgut are passed through the apex of this created flap so that their free ends are on the mucosal side (Figure 3). A urethral catheter is then placed to the bladder. The sutures are passed down, one on either side, intraurethrally through the external sphincter, then through the urethral wall, traveling laterally and leaving the perineum on either side, where they are tied over dental roll, so as to act as traction sutures for the flap. Thus the flap and the apex of the prostatic incision, when inaccessible, need not be approximated by individual interrupted sutures (Figure 4). More proximal sutures close the defect (Figures 5 and 6). The traction sutures and catheter remain for 14 days. Suprapubic cystostomy can be continued if prolonged drainage is necessary, as in advanced ureteral or kidney damage or when there is a great deal of secondary atony of the bladder. Partial resection of the bladder is done if there is massive enlargement from atony.

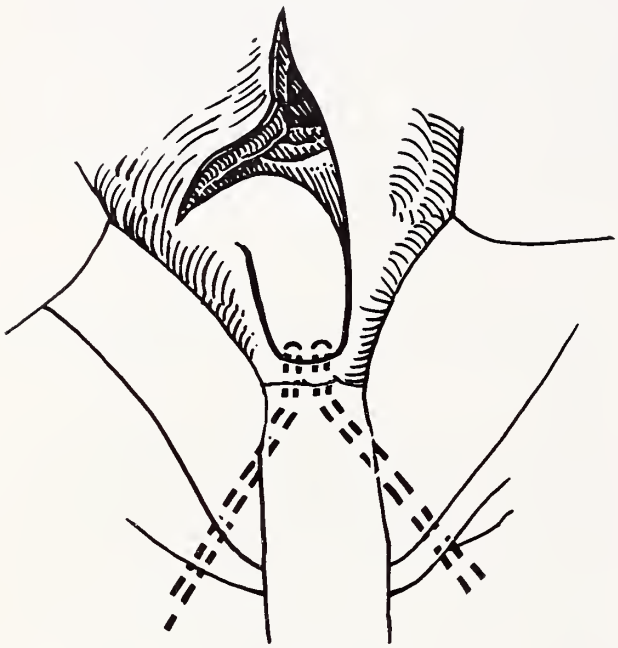

Figure 4

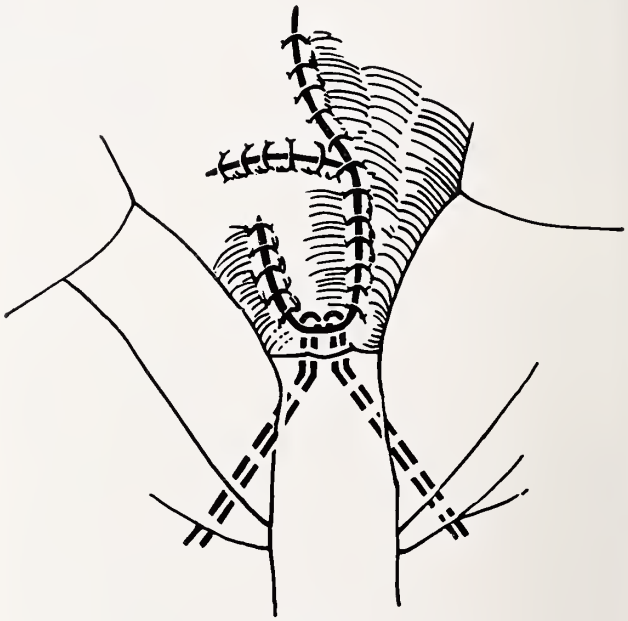

Figure 5

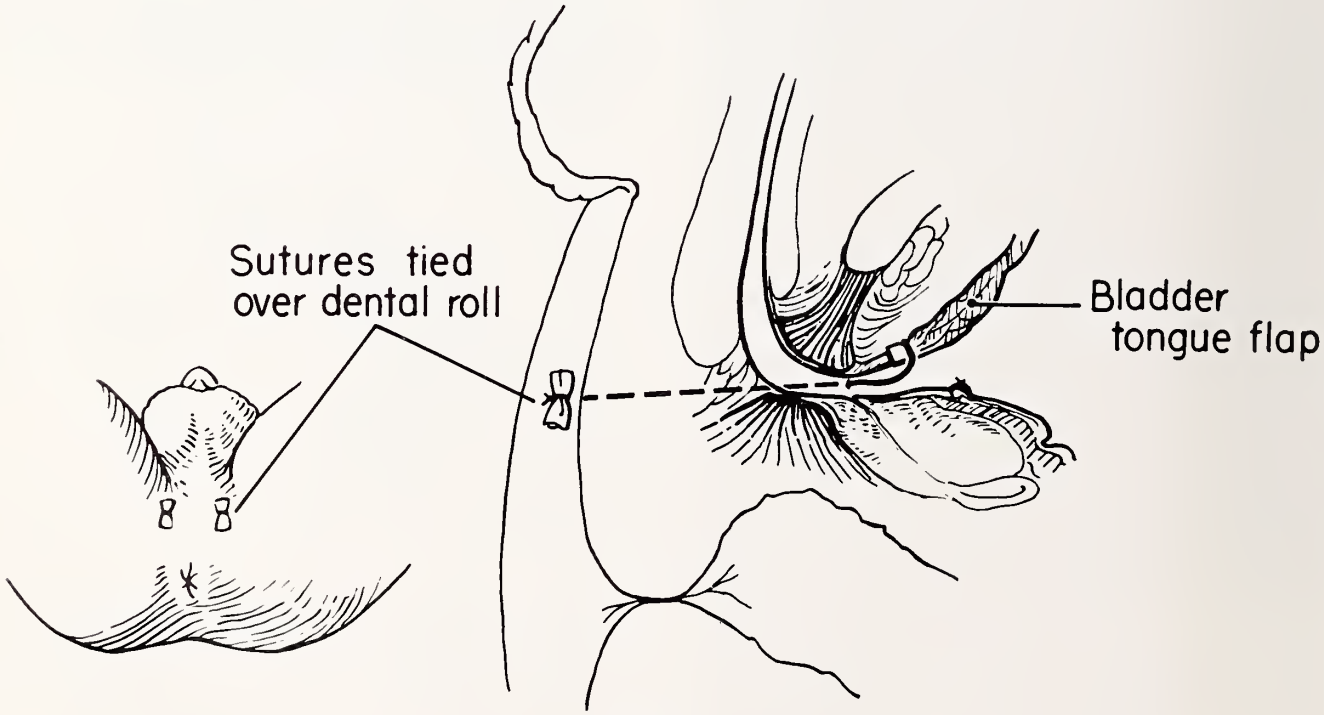

Figure 6

Figure 4 (upper left). The flap and the apex of the prostatic incision, when inaccessible, need not be approximated by individual interrupted sutures. Figures 5 and 6. Sutures more proximally close the defect.

It could be necessary to remove the entire prostatic urethra or to create a new bladder neck and urethra in the female, especially following trauma. Utilization of a flap of bladder to form a tube, a new urethra, as advocated by Young, Flocks and Culp and by Lapides, may be necessary.

Ureteroneocystostomy, removal of excess ureter, the Bischof procedure, etc. can be done at the same time that reparative bladder neck surgery is performed. It is important to evaluate the ureters preoperatively and at the time of bladder neck surgery. If the ureters are dilated, elongated and tortuous, so that grossly they look like small bowel, their atony will prevent adequate transport of urine from the kidney to the bladder. This would mean that even though a wide-open bladder outlet had been created, progressive renal failure would continue to occur.

In performing ureteroneocystostomy, we have often utilized the cuff or nipple technic of Vest, in which a turned-back cuff is made of a 1-2 cm. segment of the ureter lying within the bladder lumen. We feel that this may minimize subsequent reflux without leading to stricture or stenosis.

Vesical diverticula are fortunately less common in children than in adults, but they can be removed when the bladder neck is revised.

Nephrostomy drainage may be necessary if there is far-advanced renal damage, before any reparative attempts are made at the bladder neck.

The use of an isolated segment of the ileum as a conduit for ureteral urine to the outside is probably most applicable in the myelodysplasia cases. Exclusion of the bladder, with urinary diversion, is resorted to in neurogenic dysfunction at times, and the often concomitant incompetence of the anal sphincter precludes ureterosigmoid anastomosis.

In summary, treatment must be determined by the extent of the lesion. Often this is not best determined until the time of surgery. However, one must eliminate all functional obstruction if possible. Renal failure, compounded with infection, kills these children. Therefore, adequate renal drainage should be provided, whether this means nephrostomy, prolonged cystostomy or indwelling urethral catheter drainage. Because of secondary atony, mere correction of the anatomic obstruction may not be sufficient. On the brighter side, however, children have a tremendous recuperative

Figure 7 A

Figure 7 B

Figure 7 shows x-rays of a 10-year-old boy with a one-year history of increased frequency to every 30 minutes, nightly enuresis and daytime dribbling of urine. Intravenous urograms showed only a mild left hydronephrosis. A. The preoperative voiding urethrogram shows elevation of bladder neck and lack of funneling at bladder neck. B. A six-month postoperative urethrogram shows a wide-open bladder neck, with good funneling following Y-V plasty of bladder neck and excision of a posterior wedge of the bladder neck for severe bladder neck contracture. The patient is continent, and has normal voidings and no enuresis.

ability, when aided by drainage and time. (Figure 7 illustrates correction of bladder neck obstruction by (A) preoperative and (B) postoperative voiding urethrograms and complete disappearance of symptomatology.)

SUMMARY

The mechanisms of urination and of obstruction have been presented. The significance and importance of increased urinary frequency and enuresis as early symptoms of bladder neck obstruction in children have been stressed. The findings have been reviewed, and the causes have been classified. The diagnostic tools and aids have been reviewed, and the therapy has been discussed. A new bladder-flap operation for selected cases of bladder neck obstruction has been presented.

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IMS EXECUTIVE DIRECTOR IS HONORED

In New York City during June, the executive director of the Iowa Medical Society, Mr. Donald L. Taylor, was chosen as president-elect by the National Association of Medical Society Executives. The laymen who are in charge of day-to-day operations of medical society offices in all 50 states, the District of Columbia and some of the territories compose the membership of the organization.

In this connection, Dr. Otto N. Glesne, of Fort Dodge, president of IMS, has asked the JOURNAL to publish the following statement, one with which the editors heartily concur:

"The honor that the National Association of Medical Society Executives has conferred upon Don Taylor further proves the often repeated statement that one's talents and abilities are more frequently recognized away from home than at home. For many of us, and particularly for me, Don rates as a top-notch executive. Few men, even among executive secretaries, can match his devotion to the cause of medicine, and there are few men who can equal his ability at accommodating a variety of different viewpoints so that the highly individualistic men who practice medicine may agree upon a single course of action.

"He has often told me that, to his way of thinking, the benefits that physicians render to their fellow men and women far outweigh the occasional failings for which they are repeatedly criticized. A layman has to have a great deal of understanding, patience and, let me say, endurance to reach and to retain that attitude.

"I personally wish to congratulate him for having received this well-deserved honor, and I recommend that the other members of the State Society do likewise—even that they take time to congratulate him by mail."

Surgical Treatment of Diverticulitis Of the Colon

WARREN H. DE KRAAY, M.D., WILLIAM L. YETTER, M.D., and EDGAR S. BRINTNALL, M.D.

IOWA CITY

FORTY-SEVEN PATIENTS with diverticulitis of the colon were admitted to the Surgical Service of the Iowa City Veterans Administration Hospital during the seven-year period 1954-1960. Operative treatment was carried out in 35 patients. There were two postoperative deaths. Good results followed operation in the 33 surviving patients.

CLINICAL OBSERVATIONS

All 47 patients in the series were males, ranging in age from 34 to 70 years. In four-fifths of the patients, the ages varied between 50 and 70 years. The durations of symptoms in this group varied from one day to 10 years, but most of the patients (80 per cent) had developed their symptoms during the year prior to surgery.

The commonest complaints were as follows:

	Patients
Abdominal pain	39
Rectal bleeding	19
Diarrhea	16
Constipation	10

Usually, there were two or more manifestations of the disease in each patient. The abdominal pain was an aching or cramping—local in the lower abdomen or more diffuse, depending upon the dominant pathologic process, e.g., obstruction, localized inflammation or spreading peritonitis. The rectal bleeding, partially or entirely, was of the characteristic *bright red* type, and was for the most part separate from feces, rather than mixed with them. In degree, it was usually mild or moderate. In three patients with rectal bleeding, the hemoglobin measured less than 6.0 Gm. These patients responded to conservative management, which included blood transfusions prior to surgical resection of the involved colon. In one interesting patient (C. K., No. 25612), near-fatal exsanguinating hemorrhage occurred from a fistula originating in a diverticulum of sigmoid colon that had eroded the deep epigastric artery.[1] The patient recovered following emergency sigmoid colon resection. In another patient (H. B., No. 34187), severe bleeding continued following resection of a duodenal diverticulum. At reexploration, the bleeding was found to have its origin from an obscure diverticulum of the ascending colon. Segmental resection of that segment of colon eliminated the rectal bleeding.

The flat film of the abdomen was helpful in determining the presence of free air as an indication of free perforation of a diverticulum and in indicating the presence of an obstructing mechanism in the left colon. The barium enema was found to be the most valuable diagnostic aid, revealing diverticula in 26 patients, bowel constriction in three, and a fistula in one. Barium enema studies were usually but not invariably performed. In two instances, this procedure was not carried out because the patients died following emergency colostomies. Sigmoidoscopic examination in selected patients was seldom of diagnostic value, but it helped to exclude certain other disorders of the distal colon such as carcinoma, polyposis and ulcerative colitis. The white blood cell count was of little diagnostic aid. In only 22 of the 47 patients were there counts of above 10,000 at admission.

SURGICAL CONSIDERATIONS

Diverticulitis should be considered primarily a non-surgical disease. Many patients with single or occasional mild attacks of diverticular inflammation can be treated satisfactorily by non-surgical means consisting of appropriate diet, control of constipation and chemotherapeutic or antibiotic drugs. The diverticula consist fundamentally of mucosal extrusions through the muscle of bowel wall, alongside vessels which penetrate the muscle. The sacs extend into mesentery or epiploic appendages, the tissues of which surround the diverticula and serve as buttresses against free perforation. Thus, diverticulitis from obstruction of the neck of the diverticular sac is less likely to result in free perforation and spreading peritonitis than is appendicitis due to obstruction of the appendix or to interference with its blood supply.

Operative treatment of colon diverticulitis is indicated by complications of the disease. As in other abdominal disorders such as gastric and duodenal ulcer, ulcerative colitis and regional enteritis, the complications that call for operative management in cases of diverticulitis are obstruction, perforation, hemorrhage and fistula formation.

Twelve of the 47 patients admitted to the Surgical Service with sigmoid diverticulitis responded to non-surgical treatment, presented no complica-

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tions, and since the diagnosis of benign inflammatory disease was unquestioned, did not require surgical intervention.

The 35 patients in the series who underwent surgery presented the following primary indications:

	Patients
Obstruction	11
Perforation	11
Bleeding	8
Fistula	5

Inability to exclude carcinoma of the colon with reasonable certainty was frequent in this group, and constituted an additional indication for operation in some patients. In some instances surgery was indicated because the disease was recurrent and/or unresponsive to *medical* treatment.

Whenever reasonable, the initial treatment of diverticulitis patients should be conservative. Treatment may include antibiotics, upper-gastrointestinal-tract tube suction, parenteral fluids and blood transfusions (if indicated by anemia, hypovolemia or continuing blood loss). Subsequent oral feedings, saline laxatives and bowel preparation with sulfonamides and/or antibiotics often enable the surgeon to perform colon resection and primary anastomosis safely. When emergency surgical management is required, a right transverse colon loop colostomy is performed as a first-stage operation. Resection and anastomosis are then performed as a second stage. Colostomy closure without second-stage resection, after apparently complete subsidence of inflammation, bleeding or obstruction, has not been carried out in this group of patients, inasmuch as previous experience indicated a high incidence of recurrent difficulty following clostomy closure. It is our judgment that the patient in whom emergency proximal colostomy is required should be subjected to subequent colon resection routinely.

The procedures utilized in the 35 surgically treated patients were:

		Patients
Primary resection and end-to-end anastomosis		15
Three-stage operation		
(1) Proximal colostomy, (2) Resection and anastomosis, (3) Colostomy closure		13
Two-stage operation		
(1) Colostomy, (2) Resection and colostomy closure	2	
(1) Resection and colostomy, (2) colostomy closure	1	
	—	3
Abscess drainage only (subsequent fistula healed)		1
Colostomy only (patients died postoperatively)		2
Permanent colostomy (with left hemicolectomy)		1
		—
		35

Primary resection with end-to-end anastomosis was the most frequently performed procedure and was safely carried out, following careful preoperative management directed toward improving the patient's general status as well as controlling local inflammation and preparing the bowel for resection.[2] The extent of bowel resection required was variable. Most of the sigmoid colon was usually resected, but occasionally the operation amounted to a left hemicolectomy. Resection was routinely carried distally to the rectosigmoid junction. Open-bowel anastomosis was the method usually employed, but occasionally a closed technic with a single suture line of interrupted non-absorbable sutures was used. In all instances, particular attention was directed toward maintenance of good blood supply to the anastomosis, and toward the avoidance of narrowing and putting tension upon the anastomosis.

Other things being equal, the intent was to resect all of the segment that contained diverticula. When the colon diverticulosis was so extensive that diverticula remained in bowel proximal to the resected segment, care was taken to avoid including a diverticulum in the suture line, for to do so would lead to leakage and post-resection abscess, peritonitis or fistula formation. Frequently an adherent, firm inflammatory mass cannot be differentiated by palpation and inspection from carcinoma with extension. Incision into the bowel may be required, to permit direct examination of the mucosa, to exclude the diagnosis of carcinoma, and thus to prevent needless radical resection of bowel and adjacent viscera.

Staged resections are indicated in diverticulitis of the colon when there is fistula, abscess or peritonitis, and when obstruction or acute inflammation have not been relieved by conservative treatment. The first stage consists of a loop colostomy located in the right transverse colon, so that it will not interfere with mobilization of the splenic flexure if this latter should become necessary at the second-stage resection. Palpation of the site of diverticulitis at the time of colostomy is a dangerous maneuver, for it may result in the spread of local peritonitis or the rupture of a confined abscess. It has been proposed[3] that retained fecal material between a transverse colon loop colostomy and a diverticulitis perforation may act as a mechanism that sustains leakage. In general we have been satisfied with the response of patients following proximal colostomy. We are not inclined toward obstructive resection because of the frequent foreshortening of the sigmoid colon mesentery in diverticulitis and because of our fear of disseminating localized or localizing infection. However, obstructive resection, resection with closure of the distal limb and proximal terminal sigmoid colostomy or exteriorization of the sigmoid (if technically possible) may have a place in free perforation with spreading peritonitis. These technics have been advocated by Boyden.[3] Fortunately, even free perforations tend to seal off quickly, particularly following proximal bowel decompression by colostomy.

Sixteen patients were managed by staged resections, 13 of them by three-stage procedures. In two of the remaining patients, the colostomy was closed at the time of the second-stage colon resection. In a third patient whose disease had been misdiagnosed preoperatively, resection of the sigmoid colon and adherent involved ileum, together with proximal colostomy, comprised the first-stage procedure. The second stage consisted of colostomy closure.

In the usual three-stage resection, a one-month interval between the first and second stages and a two-to-four-week interval between the second and third stages are appropriate. The interval between the first-stage colostomy and the second stage in 15 patients of this series was one month in 10 and longer in the other five. The one-month interval ordinarily is adequate to permit the acute inflammation to subside, and no advantage was noted when the interval had been prolonged to two or three months. However, in one patient a second-stage resection was attempted at two months and was postponed because of matted adhesions and persistent inflammation. Six months later, the resection was performed easily. The two-to-four week interval between second-stage resection and third-stage colostomy closure was found to be satisfactory in all instances. To prolong this interval would invite narrowing of the anastomosis because of its lack of function.

Two patients who were treated by staged procedures presented sigmoid-cutaneous fistulation preoperatively. In one, the cutaneous fistula opening was suprapubic, and in the other it was located in the right lower quadrant. In both patients, drainage ceased following transverse colon colostomy, and both had uncomplicated postoperative courses following their staged resections.

Colostomy alone was performed upon two patients who did not survive to undergo colon resection. One died of superior mesenteric artery thrombosis on the day of operation, and the other died on the seventh postoperative day of peritonitis, with multiple abscess formation. None of the 11 patients who survived colostomy was too poor a risk for subsequent staged resection, and permanent colostomies were thus unnecessary. However, in one poor-risk patient with multiple sclerosis (W. L. No. 37373), a permanent transverse colon colostomy was established at the time of an emergency left hemicolectomy for bleeding. The rectal stump was closed.

Postoperative complications were encountered in 12 patients, and consisted of fistula from the colon anastomosis in one, homologous serum jaundice in one, bleeding from the colostomy stoma in one, wound infection in seven, and incisional hernia in two. The frequency of wound infection is not surprising, when one considers that diverticulitis is an inflammation and often is associated with a purulent exudate.

The early results of operation were good in all 33 survivors. Late follow-up examinations were obtained in 21 instances. All showed good results. Three of the 21 required dietary management and Metamucil for constipation.

SUMMARY

Diverticulitis of the colon is primarily a nonsurgical disease, but surgical treatment is indicated when conservative treatment has failed and when complications such as obstruction, perforation, hemorrhage and fistula formation have occurred. The suspicion of malignancy may also indicate surgery.

Initial preparatory treatment of the patient in whom resection is indicated may make one-stage resection and end-to-end anastomosis permissible.

A three-stage operation, consisting of (1) initial proximal transverse colon colostomy, (2) resection and end-to-end anastomosis, and (3) colostomy closure, is a satisfactory method of treatment when the local inflammatory reaction persists or fistulas develop. A one-month interval between stages is usually appropriate.

Thirty-five patients with diverticulitis have been treated surgically at this institution, with 12 postoperative complications and two postoperative deaths.

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CONTRIBUTIONS TO NFME HAVE INCREASED

Contributions from industry to the National Fund for Medical Education in 1960 reached a new high of $2,418,221, according to the organization's annual report. This sum represents an increase of 8.8 per cent over the money contributed in 1959. Aided by a matching grant of $919,000 from the Ford Foundation, the Fund was enabled to make awards totaling $3,138,460 to the nation's 85 medical schools. That was an increase of $100,000 over the grants made in 1959.

The National Fund for Medical Education collects money for the support of medical schools just as does the American Medical Education Foundation, but its appeals are addressed to businessmen, whereas the AMEF solicits funds from physicians and wives of physicians. NFME was formed in 1949 under the leadership of Dwight D. Eisenhower, then president of Columbia University. Ex-president Herbert Hoover is honorary chairman of the Fund's Board of Trustees, which is composed of Dr. James B. Conant, a former president of Harvard, and other educators and business leaders. Mr. S. Sloan Colt, former chairman of the board of Bankers Trust Company, New York City, is president of the Fund.

During 1960, more than 1,900 corporations contributed amounts ranging from $5.00 to $100,000.

Aminoaciduria and Mental Retardation

Part II

Phenylpyruvic Oligophrenia, Phenylketonuria (PKU)

HANS ZELLWEGER, M.D.

IOWA CITY

PHENYLKETONURIA (PKU) was described for the first time in 1934 by Følling,[1] in Norway. He found a positive ferric chloride test in 10 of 430 mental defectives. In the following years, a number of cases were described by Penrose in England,[2] Jervis in America,[3] Brugger in Switzerland[4] and others. At the present time, many reports from different countries are available.[5] The incidence is estimated to be between one in 20,000 and one in 40,000. The disease is probably more frequent in people of Northern European stock, though it occurs in Southern races as well. It presumably is less frequent in Negroes and in Jews.

PKU is a hereditary disease with autosomal recessive transmission. Both parents have to carry the gene to produce the manifest disease in 25 per cent of their offspring. Fifty per cent of the progeny will be healthy gene carriers, and 25 per cent will have normal phenotypes and genotypes. If only one parent carries the gene, all of the offspring will be of normal phenotype. As to genotype, 50 per cent, however, will again be heterozygous gene carriers.

CLINICAL FINDINGS

Infants born with PKU appear quite normal during the first few months of life.[6] Partington, however, drew attention to early-appearing signs and symptoms of PKU.[7] In 14 of 27 cases in his series, vomiting occurred in the first trimester. The vomiting was explosive and led in three cases to the diagnosis of pyloric stenosis requiring a Weber-Ramstedt operation. Vomiting as an early symptom has failed to occur in our series of cases. Irritability and eczema are early signs of the disease as well, and both may be present in the first trimester. The parents may notice a slight delay in the infant's psychomotor development at about the fifth or sixth month. Signs of developmental retardation are quite obvious in the second half of the first year, and severe mental deficiency is usually found later on. IQ's below 25 are found in 60 to 80 per cent of such individuals.

Of the 106 cases of PKU reported by Paine,[8] 98 per cent were idiots or imbeciles. Normal intelligence is exceptional in PKU.[3, 4, 9, 10, 11, 18]

Considerable irritability and peculiar mannerisms are frequently encountered. All kinds of rhythmic movements of head, hands or feet may be seen. They are not pathognomonic, but certainly are suggestive of PKU. Convulsions occur in about one-fourth of the patients. The convulsions usually are generalized, yet focal seizures and infantile spasms, head-nodding spells, salaam convulsions and myoclonic jerks have been observed as well.

These children are pleasant in appearance, are chubby, and are well within the normal ranges as to height and weight. Their muscles are usually hypertonic, yet spasticity on one side and severe muscular hypotonia on the other side occur, as well. Deafness, cataracts and optic atrophy are found occasionally.

These patients usually have fair skin, even if they belong to dark-skinned families. It is sensitive and shows a tendency to eczematous reactions. The patients have a peculiar musty, pungent body odor which could be likened to the stale odor of a gymnasium. The electroencephalogram is rarely normal. Spikes, spikes and waves, hypsarrhythmia or other abnormalities are found in many cases.

CHEMICAL FINDINGS AND PATHOGENESIS

PKU is diagnosed by the positive ferric chloride test. A few drops of a 10 per cent ferric chloride solution added to the acidified urine yields a greenish-blue discoloration. The test can be performed with a wet diaper as well. The color reaction of the urine in PKU has to be distinguished from the color reaction obtained with the same reagent (bluish black) in maple-syrup-urine disease, from the one (dark red-blue) obtained with urine containing salicylic acid, and from the one (burgundy) obtained with urine containing diaceto-acetic acid. Phenothiazines, acetaminophen or meprobamate may alter the ferric chloride test. The color reaction may either fail to occur or fade very rapidly if the PKU patient is under treatment with one of these drugs.[12]

The presence of phenylpyruvic acid in the urine can also be tested with Phenistix.®* The test end of the Phenistix is dipped into the urine or pressed into a wet diaper. The resulting color is compared with a color chart on the tag of the

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Dr. Zellweger is a professor of pediatrics at the S.U.I. College of Medicine. Part I of this presentation, dealing with maple-syrup-urine disease, argininosuccinic aciduria, oast-house-urine disease, Hartnup disease, cystinuria, hyperglycinuria, histidinuria, and cystathioninuria, appeared in the July, 1961, issue of this JOURNAL (pages 389-392).

* Ames Company, Elkhart, Indiana.

bottle. A word of caution should be interjected at this point. If the test-end is wet, a color may be seen which is somewhere between positive and negative (0-15 mg. of phenylpyruvic acid per 100 ml. of urine). This finding may lead to an erroneous diagnosis of PKU, and indeed erroneous diagnoses of PKU have been made on this basis in two children whom we have encountered. One of them had been on a phenylalanine-restricted diet for several months before the diagnosis was corrected.

The major defect of PKU consists of a deficiency of phenylalanine-hydroxylase, which under normal circumstances catalyzes the hydroxylation of phenylalanine (PA) to tyrosine. Consequently, high levels of PA (up to 90 mg./100 ml., as contrasted with a normal of 1-2 mg./100 ml.) and low levels of tyrosine (below 1 mg./100 ml., as contrasted with a normal of 1-2 mg./100 ml.) are found in the serum of PKU patients. The deficiency in the formation of tyrosine presumably affects the formation of its derivatives. Among them are melanin and tyramine, a precursor of arterenol and ephedrine. Since the pathway from PA to tyrosine is blocked, the former amino acid is converted in a greater extent to phenylpyruvic acid, phenyllactic acid and phenylacetic acid.

Interestingly enough, the urine of PKU patients also contains increased amounts of parahydroxy-phenyl-lactic acid, parahydroxy-phenylacetic acid and orthohydroxy-phenylacetic acid. The former substances are, under normal conditions, end products of tyrosine degradation. Since PA hydroxylase is lacking and tyrosine is subsequently decreased, it must be assumed that these substances are the result of the hydroxylation of phenyllactic and phenylacetic acid.

Complicating matters further, an increased urinary excretion of indolelactic and indoleacetic acid is found, as well, indicating that a disturbance of the tryptophan metabolism is associated with PKU.[13] Furthermore, it was found that PKU patients have lower serum levels of serotonin and other hydroxylated derivatives of tryptophan than do normal children, and this fact indicates a defective hydroxylation of these other amino acids as well. Apparently, there is a close interrelationship in the hydroxylations of aromatic amino acids.[14] In trying to explain these observations, we can make the following assumption. Since the hydroxylation of tryptophan and consequently the formation of serotonin are insufficient, an alternate degradative pathway predominates. Hence, increased amounts of indole compounds are excreted with the urine.

If PKU patients receive a phenylalanine-restricted diet, their urinary excretions of the indoles decrease, and their serum levels of serotonin increase. It appears as if small amounts of hydroxylase were present in PKU, yet ones insufficient to warrant the hydroxylation of both aromatic amino acids, PA and tryptophan, at the same time. Hence, there is diminished production of both tyrosine and 5-OH-tryptophan. However, if PA is restricted in the diet—if, in other words, none or a smaller quantity of hydroxylase is required for the hydroxylation of PA—the remaining small quantities of the enzyme may suffice for the conversion of increased amounts of tryptophan to its hydroxylated compounds (Figure 1).

It is not yet known which one of the different compounds produced in excess is the substance which causes toxic symptoms. Phenylacetic acid given to PKU patients increases the typical odor

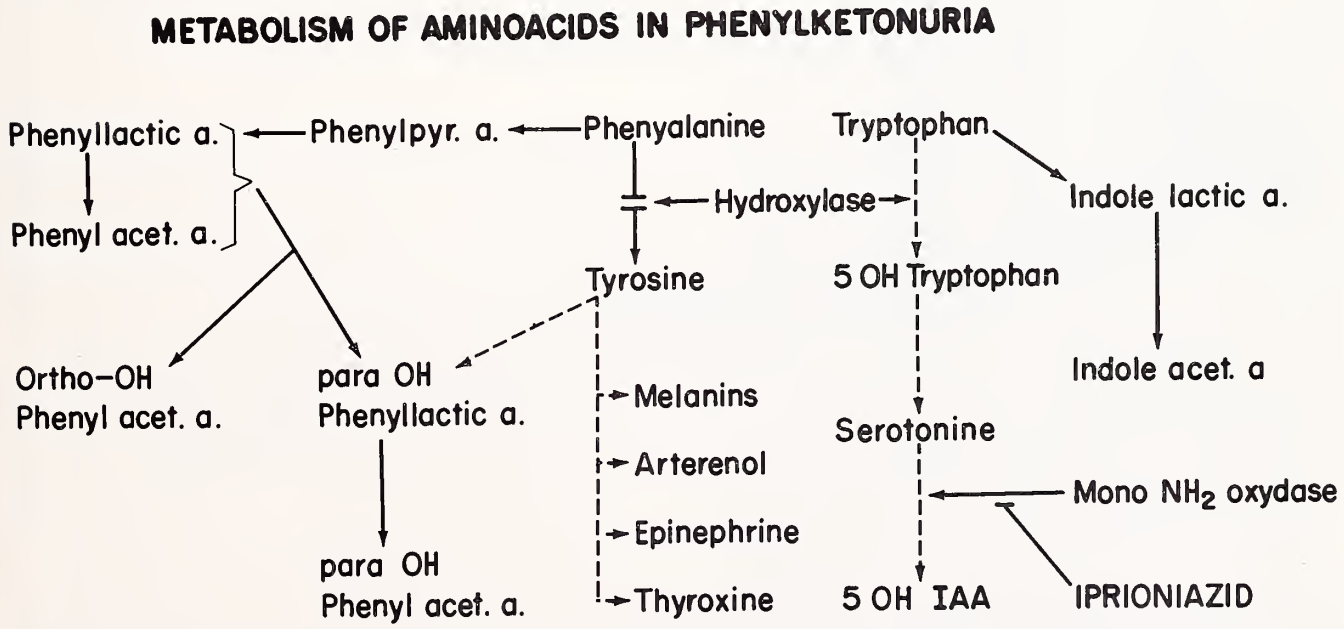

Figure 1. Metabolism of amino acids in phenylketonuria. The lack of hydroxylase leads to a decreased formation of tyrosine and possibly of 5-hydroxy-tryptophan. Alternate pathways are used, which consist in the increased formation of the pyruvic, lactic and acetic acid derivatives of these amino acids.

of the urine, but does not change the clinical picture.[15] Berendes, by blocking the degradation of serotonin with Iprioniazid, found that the irritability of PKU patients decreased and the electroencephalographic abnormalities improved.[16] However, the mental deficiency remained unchanged. Waisman was able to produce PKU in infant monkeys by feeding them huge amounts of PA.[17]

The biochemistry of PKU is far from being fully understood at present. However, it is encouraging to know that some progress has been made in the treatment of PKU.

THERAPY

Since PA and some of its metabolites accumulate in the body, it can be assumed that eliminating this amino acid should help. With our present knowledge, this can be done only by restricting the intake of PA. Indeed, by reducing the intake of PA to 10 or 20 per cent of the usual intake of normal children, the PA level in the serum normalizes, and the ferric chloride test in the urine becomes negative within a few days. Since almost all proteins used in human nutrition contain approximately 4-6 per cent PA, it is impossible to restrict PA without reducing the total intake of protein beneath the minimal requirements. One must resort to special preparations with an artificially-produced low content of PA. Such preparations are available and are widely used in younger individuals with PKU.*

In the practical calculation of a PA-restricted diet, the dietitian is bound to observe two requirements: an adequate reduction of PA intake, and a sufficient intake of protein. At our institution, we allow an initial reduction of the daily PA intake to 40 mg. per Kg. of body weight for infants less than one year of age; to 32 mg. per Kg. of body weight for children between one and three years of age; and to 16 mg. per Kg. of body weight for older children. As soon as a normal level for serum PA has been reached, the PA intake is controlled so as to maintain a normal level in the serum. A serum PA level of 2-4 mg. per cent in children below the age of 2 years and of 4-6 mg. per cent in older children is believed to be admissible.[22] The ferric chloride test is not sensitive enough for this purpose. The main source of protein is Lofenalac, which contains 25 Gm. of protein and 120 mg. of PA per quart of the diluted normal formula. The minimum protein requirement for a child, minus 1 to 5 Gm., is covered by Lofenalac. The amount of PA given with this formula is then subtracted from the total PA allowance. The remaining PA is given in the form of other protein-containing nutrients. Tables indicating the protein and PA contents of various foods are available.[19, 20]

It is by no means always easy to maintain an adequate protein intake, particularly when the child refuses to take the diet, and indeed it doesn't taste very good.[21] A great deal of effort and skill is required of the dietitian, the nurse and the mother in getting some of the phenylketonurics to eat their diet.

The success of a PA-restricted diet depends on the age of the patient, and in essence, on the absence of irreversible brain damage. This, in exceptional instances, can already be present at the end of the second trimester,[11] but generally it manifests itself clinically only in the second half of the first year of life. If treatment is started in the first few months of life, a normal psychomotor development is almost certain. If the treatment begins later, some improvement is still possible. The children become less irritable, their EEG's may improve, their convulsions may be controlled, their skins and hair may darken somewhat and even their eczematous lesions may improve, but normal intellectual developments are beyond certain expectation, though some improvement may be achieved in this respect as well (Figure 2). Future research will have to find out whether a developmental level of trainability can be achieved when dietetic treatment begins at a later age only. Very little or no improvement is expected if the dietetic treatment begins after the third year for children with an I.Q. below 30[22] or after the fifth year for children with an I.Q. below 50.[23]

It is not yet known how long a PA-restricted diet must be maintained. It may be that older children (just as in galactosemia) tolerate PA and can be permitted a more liberal diet. These certainly are some important questions that are awaiting answers, particularly since the PA-restricted diet is rather expensive and indeed sometimes is beyond the means of the patient's family. It follows from this discussion that an early diagnosis is mandatory.

DIAGNOSIS

Since the clinical appearance of PKU in the first few months is unobtrusive, the diagnosis is frequently made only at a time when irreversible brain damage has already occurred. This is preventable, however, if the ferric chloride test is performed routinely in every infant no earlier than at 4-6 weeks of age. In the first few weeks of life, the test is consistently negative, and occasional false-negative results are obtained later as well. Therefore, the test should be repeated at least three times. At some institutions throughout the country, the ferric chloride test has become a routine procedure in the well-baby clinic.

In younger siblings of known PKU patients, the PA level in the serum should be determined within the first few days of life. Though the PA content of the cord blood is normal, increased levels will be obtained shortly after feeding with human or cow's milk is started. So far, a number of cases have been detected at a very early age, and

* Lofenalac® (Mead Johnson & Co., Evansville, Indiana); Ketonil® (Merck, Sharp & Dohme, Rahway, New Jersey).

treatment has been started accordingly. Some of those patients have subsequently been on a PA-restricted diet for several years and have been developing normally.

For reasons of eugenics, it would be helpful if heterozygotes could be determined. The determination of heterozygotes by means of a phenylalanine load test has been tried, but the results in normals and in heterozygotes have overlapped too much to permit definite conclusions.

SUMMARY AND CONCLUSION

The symptomatology, biochemistry and treatment of phenylketonuria have been discussed. The importance of an early diagnosis has been emphasized. Irreversible brain damage is usually preventable if the condition is adequately treated before the child reaches the age of six months. In view of the severity of the mental retardation in untreated phenylketonurics, the introduction of the ferric chloride test as a routine procedure in the well-baby clinic of every physician is recommended, in spite of the fact that the overall incidence of PKU may not be more than one in 20,000.

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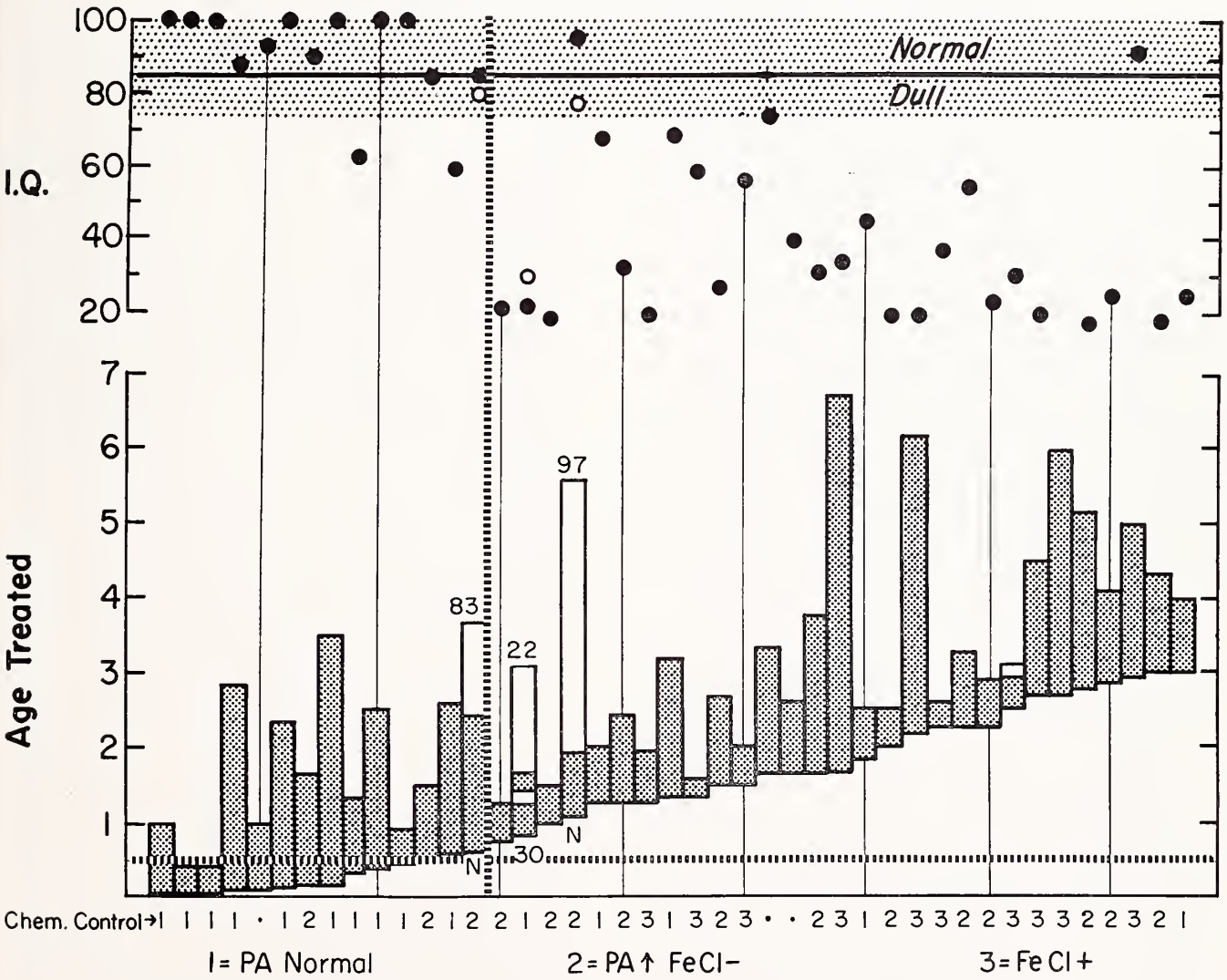

Figure 2. Phenylalanine-restricted diet and IQ in relation to the age period when the diet was begun (compiled from data gathered by Knox[21]). The dotted columns represent the age periods in which each patient began receiving the PA-restricted diet. The white columns represent periods between the discontinuation of the diet and the psychometric evaluation. The dark circles indicate the IQ obtained immediately after the PA-restricted diet was discontinued. The white circles indicate the IQ obtained after a period of unrestricted nutrition.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 44-year-old, married shop foreman was admitted to the hospital because of a sudden onset of chest pain. He had had high blood pressure for 18 years. On Sunday he had worked hard in his yard and had felt well, but on arising at 7:00 a.m. on Monday, he had felt a lump in his throat and had experienced a severe, sharp anterior chest pain that lasted one minute. The pain started in the neck and progressed to the epigastric area. Thereupon he had returned to bed. The sensation of the lump disappeared, but the pain persisted as a dull throb across the middle of his chest and a continuous ache across the small of his back. Three hours after the initial pain, he had attempted to take a shower, had become faint, had experienced weakness and tingling in both legs, especially in the right, and had returned to bed. On Tuesday, he was admitted to the hospital.

Physical examination revealed a well developed, well nourished white man in no distress. The blood pressure was 210/100 mm. Hg in both arms, and the pulse was 84 per minute and regular. The patient said that he had some pain beneath the sternum. There was no lymphadenopathy. The chest was symmetrical, and it expanded well and was resonant. There were no rales or wheezes. The left border of cardiac dullness was in the midclavicular line. There was a grade II systolic murmur heard in the aortic area. The abdomen was flat, soft and non-tender. No masses were palpable. Rectal examination was normal. Radial pulses were equal and of normal volume. The right femoral pulse was not palpable, but the left femoral pulse was normal in volume. The dorsalis pedis pulse on the right was not palpable, and on the left, the dorsalis pedis pulse was palpable but diminished.

The hemoglobin was 13.5 Gm./100 ml., the white count was 8,900/cu. mm., and the hematocrit was 36 per cent. Examination of the urine revealed no sugar, albumin or blood. An anteroposterior film of the chest taken in the supine position showed considerable widening of the thoracic aorta and slight obliteration of the aortic notch below the knob. The heart was at the upper limits of normal size, and the contour suggested left ventricular hypertrophy. The lung fields were clear. An anteroposterior film of the abdomen revealed normal gas pattern. The visualized bones were normal. No calculi were seen, and no calcification was seen in the abdominal aorta. An electrocardiogram showed a sinus rhythm at a rate of 65 per minute. The RS-T segment was depressed in leads V_5, V_6, standard lead I, and AVL. A QS deflection was present in lead AVR only. Inversion of the T wave was observed in lead AVL. The interpretation was: "ST and T wave changes suggest myocardial disease." The venous pressure was 264 mm. H_2O, and the circulation time was 20 seconds.

The patient was admitted to the ward and ordered to stay at bed rest. The blood pressure and the pulse rate were recorded every 30 minutes. Demerol, 100 mg., was ordered as needed for chest pain. An immediate dose of Digoxin, 0.5 mg., was given, and further doses of 0.5 mg. each were ordered at eight-hour intervals, until five doses had been given.

On Wednesday at 2:00 a.m., the patient was given Demerol for chest pain. At 2:30 a.m., the patient's pulse and blood pressure were unobtainable. He was cyanotic and his breathing was extremely labored. An intravenous infusion containing levarterenol bitartrate was started. This medication was introduced at a rate that would maintain the systolic blood pressure at approxi-

mately 120-150 mm. Hg. On Wednesday at 1:30 p.m., the patient said that he was having some abdominal discomfort from gas. His systolic blood pressure was 150 mm. Hg, and his pulse rate was 120 beats per minute. The right femoral pulse was palpable and equal to the left femoral pulse. The neck veins were very considerably distended.

During most of Thursday and Friday, the patient's course was virtually unchanged. He continued to receive intravenous levarterenol bitartrate. He excreted very small quantities of urine. His blood urea nitrogen, which had been 29 mg./100 ml. on Tuesday, was 75 mg./100 ml. on Thursday. The creatinine, which was 2.9 mg./100 ml. on Tuesday, was 6.6 mg./100 ml. on Thursday. A serum transaminase determination on Tuesday had been "too high to read." Electrocardiograms had been taken daily, and they showed no change from the first tracing.

At 5:00 p.m. on Friday, the patient suddenly became cyanotic. His pulse and blood pressure were not measurable, and 10 minutes later, he was pronounced dead.

SUMMARY OF CLINICAL DISCUSSION

Dr. George N. Bedell, Internal Medicine: The case for discussion today is that of a 44-year-old, married shop foreman who had been quite well until the onset of his final illness. Mr. Schemmel will give us the students' impression of the case.

Mr. T. G. Schemmel, junior ward clerk: In studying the protocol, we have considered many lesions and have decided that one of the following would be the most likely: (1) a ruptured syphilitic aneurysm, (2) myocardial infarction, or (3) dissecting aneurysm due to idiopathic cystic medial necrosis.

We felt that we must consider syphilitic aneurysm, since 90 per cent of thoracic aneurysms are of this type. To substantiate this diagnosis, we should look for a history of syphilis, a positive serology, an expansile mass in the thorax, and clinical manifestations preceding the rupture, such as respiratory difficulties, difficulty in swallowing and a brassy cough. By roentgenography, we should expect to find erosion of the ribs and vertebrae by a saccular mass. None of these were present.

Myocardial infarction is a very possible diagnosis, but though it is substantiated by many of the clinical findings in the case, we feel that there are some discrepancies. The severe pain at the onset lasted only one minute. In myocardial infarction, we should expect the pain to last at least half an hour. The blood pressure was 210/100 mm. Hg. Characteristically, the blood pressure falls after myocardial infarction. The pulse was 84 per minute, with regular sinus rhythm. Following myocardial infarction, tachycardia and arrhythmias are the rule. The tingling in the legs and the absence of the femoral and dorsalis pedis pulses are not explained by myocardial infarction.

We feel that the findings presented can best be accounted for by dissecting aneurysm. The 18-year history of hypertension is consistent with this diagnosis and is, in fact, almost invariably found with dissecting aneurysm. The pain, as described in the protocol of this case, was characteristic of dissecting aneurysm in its onset, character, duration and distribution. The absence of pulses and the presence of tingling in the extremities are commonly found, and may have been due to occlusion of the branches of the aorta —either as a result of inclusion in the aneurysm or as a result of spasm of these branches. The occlusion can be either partial or complete, and may later be relieved spontaneously. Symptoms of shock without a fall in blood pressure are often observed in dissecting aneurysm. The EKG findings presented are compatible with hypertension and have been reported in dissecting aneurysm. Systolic murmurs are frequently heard in dissecting aneurysm, and are considered to be the result of turbulence produced by the intimal tear. However, they are usually heard over the back in the interscapular area.

Elevations of serum transaminase have been reported with dissecting aneurysm, and range from 115 to 135 units per milliliter. Some of the highest levels reported have been due to associated liver necrosis. We don't propose to explain a serum transaminase that is too high to read. The possibility of a laboratory error has occurred to us.

It is our conclusion that the onset of symptoms was due to the initial dissection, and that the episode that occurred at 2:30 p.m. on Wednesday was a hemorrhage from the aneurysm into either the mediastinum or the retroperitoneal space. It is our conclusion that death was the result of rupture of the aneurysm into the mediastinum, the pericardium, the pleural cavity or the peritoneal cavity. Statistically, the most probable of these would be a rupture into the pericardium.

Dr. Bedell: Thank you very much. I was somewhat surprised that you didn't ask for the blood serology in this case. The serology wasn't performed until the time of the postmortem examination, and the pathologist will unveil that information in proper sequence. Our second discussant is Dr. Bean.

Dr. William B. Bean, Internal Medicine: I'd like to begin my comments by reading you a poem—not one that I wrote, but the work of a *poet.* It was written by John G. Saxe, and it's called "The Blind Men and the Elephant":

It was six men of Hindustan
    To learning much inclined
Who went to see an elephant,
    (Though all of them were blind)
That each by observation
    Might satisfy his mind.

The first approached the elephant
And happening to fall
Against his broad and sturdy side,
At once began to bawl,
"God bless me, but an elephant
Is very like a wall."

The second, feeling but the tusk
Cried, "Ho, what have we here
So very round and smooth and sharp?
To me, 'tis mighty clear,
This wonder of an elephant
Is very like a spear."

The third approached the animal
And happening to take
The squirming trunk within his hands,
Thus boldly up and spake,
"I see," quoth he, "the elephant
Is very like a snake."

The fourth stretched out an eager hand
And felt about the knee.
"What most this wondrous beast is like,
It's mighty plain," quoth he.
"It's clear enough the elephant
Is very like a tree."

The fifth who chanced to touch the ear,
Said, "Even the blindest man
Can tell what this resembles most.
Deny the fact who can,
This marvel of an elephant
Is very like a fan."

The sixth no sooner had begun
About the beast to grope,
Than seizing on his swinging tail
That fell within his scope,
"I see," quoth he, "the elephant
Is very like a rope."

And so these men of Hindustan
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right,
And all were in the wrong.

The differential diagnosis of the problem represented by the man under discussion today has been covered extraordinarily well by the students and by their spokesman. I agree that far and away the likeliest explanation of the difficulty that, in less than a week, killed this 44-year-old man who had been hypertensive for some 18 years, is a dissecting aneurysm or a dissecting hematoma of the aorta.

Dissecting aneurysm is a condition which has been known to pathologists for more than 200 years. It has been written about in a series of masterful treatises and monographs, but for a long time it was looked upon as a curiosity for pathologists. The major change in the diagnostic attitude came perhaps not as a by-product of, but as a sequel to, the observations of Herrick, who demonstrated that myocardial infarction is not just a medical curiosity—a necessarily fatal condition which turns up from time to time at autopsy—but a disorder from which a patient may recover. Thus, he showed that it has importance for the clinician.

With the focus on painful affections of the chest, the diagnosis of myocardial infarction came to be made very commonly in this country during the 1920's. Even third-year students were able to diagnose it correctly! But a tendency to overdiagnose it and misdiagnose it arose. Myocardial infarction would have been the diagnosis of the problem presented by the patient whom we are discussing today, if he had been seen in many medical schools during the 1930's, and probably at some even in the 1940's. In the 1920's the mistake would have been universal. By the 1930's, the pattern was beginning to change. A series of reports was being published in which as many as half of the patients dying with dissecting aneurysm had been diagnosed correctly antemortem. Yet this improvement was completely academic, since nothing could be done after the correct diagnosis had been made. There was no very effective therapy for treating shock. The surgeons could do nothing to repair the damage. Thus, recognition of a dissecting aneurysm remained an academic *tour de force*. All of us were delighted to be able to do it properly, but sometimes we came a cropper if we concentrated our attention too narrowly, as did the wise blind men who confronted the elephant.

Briefly, I shall review with you some of the clinical situations that can occur, some of the background from which dissecting aneurysms may arise and some of the experimental work that has been done, and then turn the discussion over to the pathologist. If he shows us something that isn't dissecting aneurysm after all of this hullabaloo, I can always take refuge in the famous last words used by Dr. Louis Hamman on the rare occasions when the autopsy findings failed to support the diagnosis he had proposed at a CPC. "Well, Dr. Rich," he'd say, "This only goes to show that the *best* diagnosis is not always the *right* diagnosis."

A patient with this disorder may present to specialists in various fields of medicine. I should like to go over some of the masquerades. In the first place, what is the background? Dissecting aneurysm is not a complication of syphilis. Syphilis, in fact, confers some "immunity," for in syphilis there is a fibrosing, sclerosing process in the media. The media is inflamed and then becomes scarred, rather than softened, weakened or necrotic. The idiopathic liquefaction of the media which Erdheim described may exist unrecognized from any clinical manifestation. It sometimes occurs in people with kyphoscoliosis.

A classical example of a disease which se-

lectively affects the media of the aorta and large sized vessels is Marfan's syndrome, or arachnodactyly. Victims of this disease have a great variety of troubles. Over half of those who have died have had dissecting aneurysm, rupture of the aorta or rupture of an aortic valve.

Far and away the commonest cause of dissecting aneurysm is long-standing hypertension. What happens where dissecting aneurysm occurs after hypertension is the same thing that happens in experimental animals where something is done to them to damage the vasa vasorum. That is, they develop ischemic changes that give rise to a form of infarction in the media. Then there is dissection of the media from a wedge of blood that shears along the line of least resistance. Internal rupture admits blood under arterial pressure, with further dissection, and possibly external rupture follows. Hypertension is the classical background, accounting for probably 75 per cent of the cases. Marfan's syndrome might provide another 10 per cent. A few have a general connective-tissue disorder analogous to lathyrism, which our own Dr. Ponseti has reviewed and described in a classical study. It has a human counterpart which is relatively rare. Dissection may occur in an arteriosclerotic aneurysm, but ordinarily such a dissection is very short, and does not follow the classical patterns that occur in dissecting aneurysm or dissecting hematoma.

From the clinical point of view, what happens? The patient may be unconscious. He may or may not have focal neurologic lesions such as hemiplegia, typical of an ordinary stroke. If one feels the carotid arteries, he may be able to detect a hematoma or a mass, or even feel a thrill. Instead of focal neurologic signs, varying degrees of confusion, stupor, coma or delirium may occur. Another form of neurologic defect occurs when the dissection, going down the aorta, effectively cuts off the blood flow in the spinal arteries, causing infarction of the cord, with paraplegia or—sometimes if it is high enough—quadriplegia. Thus, sudden paraplegia without evidence of any spinal injury may characterize the onset.

One may have a pattern exactly like that of myocardial infarction in which chest pain occurs. The pain is likely to be more severe, and it may radiate in different directions and more widely than is usual in myocardial infarction. There are authentic records of patients with dissecting aneurysm who haven't had any pain at all. Characteristically, pain begins in front. It then radiates most often into the neck, into the shoulders, down the arms and especially into the back. It may radiate down the legs. Dissection down a femoral artery or into a brachial or axillary artery may cause monoplegia, or the signs may suggest embolism, with its acute cutting off of blood supply and with the development of gangrene. There are reports from surgeons who have planned an embolectomy and have found dissecting aneurysm instead. This is a mistake not likely to occur today. Those were reports written years ago when dissecting aneurysm wasn't widely recognized.

These patients may develop clinical manifestations of congestive failure. This patient's venous pressure was elevated, and he had some respiratory difficulty. Congestive failure, otherwise unexplained, is another clinical masquerade under which this condition hides itself. Manifestations of either a slowly or acutely developing cardiac tamponade appear if the dissection goes down into the pericardial sac. A larger leak, developing rapidly, obviously is not compatible with life for more than a moment or two.

With agonizing epigastric pain, all the surgical disasters of the upper abdomen have to be considered—pancreatitis, gallstone colic, ruptured peptic ulcer and all of the others. This pain may occur with retroperitoneal dissection or dissection down the celiac axis or either mesenteric artery, with massive infarction of the bowel. Mesenteric thrombosis or mesenteric embolism has been suspected without a recognition that it was part of a larger disorder caused by a different mechanism.

There may be isolated dissection into one or—rarely—both renal arteries. Particularly if the pain is bizarre or obscure, the dissection may be missed completely. Rarely, an unexplained renal failure is the main clinical problem. The first patient with a dissecting aneurysm whom I saw as a medical resident was a woman who had a dissection that involved the aorta widely. It went down to and shut off one renal artery completely. She was not known to have had hypertension. She didn't have a large heart or very much hardening of the arteries. The presenting sign was coma. She was also in shock. The blood urea nitrogen was about 130. We were utterly mystified about what was going on. Her blood pressure returned to normal, but she continued with manifestations of stupor and coma. She died. At autopsy, we found a dissection into one renal artery. The other one seemed patent, but there had been no excretion of urine, and there was no urine in the bladder, and thus perhaps she had had reflex anuria on one side. No blood got into the kidney on the other side.

Instead of rupturing outside through the adventitia into the surrounding terrain, dissecting aneurysm may rupture back into the lumen of the aorta or a branch of it. Then one may get the double-barreled aorta. Probably not more than one in 20 persons, unaided by the surgeon, survives to develop this sort of thing, but there are records of telescoped vessels, one within the other, with the original lumen and the newly acquired lumen both endothelialized. We find almost any variety of dissection. There are isolated dissections of one innominate artery, of one or both renal arteries, and of coronary arteries. There even are dissecting hematomas of the ventricular septum of the heart, though they may be a different kind of process. I haven't run across examples

of cerebral blood vessels with dissecting hematomas causing occlusive lesions and hemiplegia.

So here is a clinical situation in which we know a great deal of the background. One must be on his guard not to be misled into concentrating his attention too sharply and narrowly in one specialty, or into being bemused and bewildered by manifestations that point to a local process, when the problem is, in fact, a general one. Patients diagnosed as having hemiplegia from cerebral hemorrhage or cerebral vascular thrombosis may have dissecting aneurysm.

What do you do about treating these people? This man was treated heroically, but without success. Efforts were made to keep his blood pressure up. He was given intensive treatment with a very active vasoconstrictor. Within the last few years, treatment has become more than a matter of academic interest. Diagnosis of dissecting aneurysm is urgent because if treatment can be instituted quite promptly, surgeons have been able to put in a new piece of tubing if the dissection or hematoma is a localized one. Sometimes they can stitch the walls together to give mechanical support. Occasionally, they put a cuff of protective material around the lesion so that fibrosis will give mechanical support later. Reports have been published of several series of cases treated surgically. None of those patients have had very long follow-ups, but some of them who would have died promptly have been saved. The patient with Marfan's syndrome who has a generalized disease of the media and the mesodermal tissue is less likely to be helped by such an operation, but those with patchy disease may have healthy margins of the dissected vessel, so that a prosthesis can be introduced.

In conclusion, this is a dissecting aneurysm with classical features. The only other possibility worth considering would be a femoral embolus—perhaps a saddle embolus that slipped and worked its way down.

Probably in our patient, pulsation was restored as dissection occurred, and instead of encroaching upon and impinging upon the lumen as it progressed, the dissection pushed outward rather than inward. I am speculating, but this kind of observation has been made in the past where an originally impalpable pulse later became palpable during the progress of the disease. We have no idea where an embolus may have arisen. The patient was not fibrillating, he had no sign of cardiac infarction, and we don't have indications of any of the usual causes of arterial emboli. Thus I am still more reluctant to make the diagnosis of embolism.

I haven't discussed the electrocardiogram. One may get all of the classical findings of myocardial infarct in the electrocardiogram in cases of dissecting hematoma. The dissection may descend and impinge upon the emerging coronary arteries at the root of the aorta.

We have not called for the x-rays, and there might be something in them that would make me want to recant. Incidentally, I think it appropriate to mention that Dr. Lodwick made one of the classical studies of the x-ray findings in dissecting aneurysm while he was here in the S.U.I. Department of Radiology.

Dr. Carl L. Gillies, Radiology: We have the two films obtained immediately after the patient entered the hospital. The film of the chest does show a diffuse dilation throughout the thoracic aorta, and demonstrates the finding that Dr. Lodwick mentioned as characteristic of dissecting aneurysm—loss of the aortic knob. The heart was not appreciably enlarged, and the lung fields were clear. A film taken of the abdomen was intended to reveal calcification of the great vessels, if any was present, but none was seen.

Thus, the finding from an x-ray standpoint was that of dissecting aneurysm.

Dr. Bean: One additional radiographic help is an angiogram. If one puts some radiopaque material in and has the films taken serially, he may demonstrate by the wide shadow that the lumen is well inside and away from the outer margin of the aneurysmal shadow. This particular technic is a refinement in distinguishing between an arteriosclerotic or syphilitic aneurysm and a laminated clot.

Dr. F. P. Aleu, Pathology: This patient did have a dissecting aneurysm of the aorta. It was a very extensive lesion that involved the complete length of the vessel. It extended from the aortic valve down to the bifurcation and involved part of one iliac artery. This aneurysm resulted in one of the complications that have been described here today. There was a large hemopericardium containing about 600 cc. of blood. The blood was unclotted, a circumstance that suggests recent development and is therefore the perfect setting for the development of cardiac tamponade. This latter is what we think happened and what probably accounted for the patient's death.

The prosector, in the presence of an aneurysm of the thoracic aorta in a relatively young man, decided to exclude the possibility of syphilis completely. He did this by performing a postmortem Reiter protein complement fixation test. To everyone's surprise, it turned out to be positive. However, the positiveness of that test doesn't necessarily make the diagnosis of syphilis certain unless the test is repeated twice. It wasn't repeated in this instance, for there was no significant clinical or pathologic support for the diagnosis.

The lesion that we have been commenting upon today does seem to be related in a minimal way to some of the other phenomena that we have mentioned—atherosclerosis, syphilis, Marfan's syndrome, and hypertension. But the basic problem seems to be the degeneration that occurs in the media of the aorta of a patient of middle age. Usually, this takes place in people between 40 and 60 years of age. Of course, there have been extreme cases. I think Dr. Fry reported the pres-

ence of a dissecting aneurysm in a child of 14 months, and Dr. Schumann reported a case of the same lesion in a lady of 100 years of age. The commonest situation, however, is in a patient between 40 and 60 years old.

This degeneration presents itself in the form of a polychromatic substance in the media, and it seems that the mucopolysaccharides of the ground substance, namely hyaluronic acid, undergo degeneration, and then the ground substance cannot perform the role for which it was intended. I am unfamiliar with the exact biochemical nature of the mucopolysaccharide change, but perhaps there is someone else in the room who would like to elaborate it. The result of this degeneration is a softening of the media, with the subsequent development of some cyst-like lesions that result in the separation and splitting up of this layer of the vessel. This phenomenon has been designated "cystic medial necrosis." The peculiarity of this type of degeneration should once again be emphasized. It is not followed by the usual injury and repair type of changes to which we are accustomed. Fibrosis doesn't take place here, and thus there is no healing. Rather, there is a self-perpetuating disintegration of this layer of the arterial wall.

Thus, medial necrosis of the aorta was diagnosed, and one of the complications, hemopericardium, was found. Another complication was the presence of a splenic infarct, which is the result of one of the mechanisms that Dr. Bean has described. The mesenteric artery was not involved by the process, but the splenic artery was involved, and the result was a splenic infarction.

As far as I know, there were no neurologic complications. Unfortunately, permission to examine the brain was not granted.

I'll show a few slides to illustrate some of these points. This Kodachrome shows a cross section of the aorta. I don't know precisely at which level this cut was made, but it shows the presence of a collection of blood within the aortic wall and also the presence of some atherosclerotic plaques scattered throughout the intimal surface.

The next picture (Figure 1) is a photomicrograph of a hematoxylin and eosin section of one of the areas of dissection, and it is low-power mainly because what I think should be illustrated here is the general geography of the area, rather than the cytologic detail. As you can see, there is a separation of the constituent coats of the aorta, and within the line of cleavage one can see some red blood cells and some necrotic debris that may consist of the degenerating ground substance of the media, to which fibrin, a few erythrocytes and a small number of inflammatory cells have been added.

Figure 2 shows an elastic stain of a similar area, illustrating the tremendous distortion of the elas-

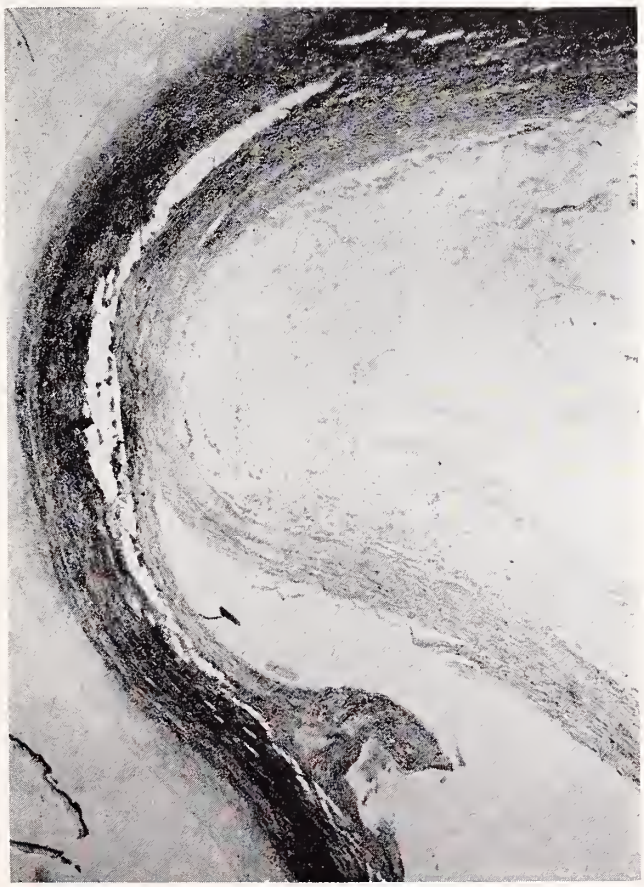

Figure 1

Figure 2

tic fibers (the black-stained elements). These fibers have also been destroyed and are split in the middle by red blood cells. There is also some of the degenerating fibrous debris that I noted in the previous picture.

Figure 3 is a similar preparation stained with allochrome. It also shows the separation of the aortic medial coat and the degenerating necrotic debris in the media, forming the small cyst-like cavities that are so characteristic of medial necrosis.

In relation to this main finding, the patient had some associated lesions that I shall describe very briefly. This next picture is a low-power view of the liver. It shows an extensive central necrosis due to subacute congestion that is disrupting the general architecture. Here is an island of essentially well preserved liver cells, and there is another like it in the left part of the screen. The rest, however, is necrotic and has been subjected to an increased stasis or pressure that has resulted in ischemia and the death of the liver cells.

The following is a section of the spleen that I am showing you in order to illustrate the extensive infarction present in that organ. The architecture of the spleen is almost completely obliterated. The Malpighian follicles are not well identified. The trabeculae are also poorly visualized, and what we see is a hemorrhagic area with peripheral aggregates of hematoidin pigment. No iron stains have been put upon this section, for we wanted definitely to identify this pigment.

Finally, here is a section of the lung. It has little connection with the pathologic entity being discussed today, but I show it so as to point out the severity of the reduction in the size of the alveoli. The lung is quite collapsed. This is a change that we seem to encounter rather frequently at autopsy—sometimes understandably and sometimes not. I wonder what significance we should attach to the presence of collapsed pulmonary parenchyma during the postmortem examination. Dr. W. K. Hamilton has been conducting some experiments that well may modify our conceptions of pulmonary collapse and its pathologic significance. I am sure that in the near future we shall have an opportunity to learn more about this.

Among other minor findings at autopsy, there was a mild but diffuse arteriolar nephrosclerosis in both kidneys.

Dr. Elmer L. DeGowin, Internal Medicine: Were the renal arteries involved in this dissection?

Dr. Aleu: No, the renal arteries were not involved.

Dr. Bedell: The clinical diagnosis, surprisingly enough, had been dissecting aneurysm of the aorta.

Dr. Bean has brought along a large and impressive-looking volume in Latin, and perhaps he would like to say something about it.

Dr. Bean: I won't read any of this large book to you, but it is strikingly appropriate that I should call it to your attention on this particular occasion. It is Morgagni's DE SEDIBUS (The Seats and Causes of Disease), which he published at the age of 79 in the year 1761, exactly 200 years ago! It contains the first clear description of dissecting aneurysm as we know it today. This is a copy of the second edition, and many of you may share my rather vague recollection of Latin, but I thought you might like to see the page on which he described it.

Figure 3

Dr. F. J. Tutunji, Internal Medicine: Dr. Bean, would you consider tapping the pericardium to be useful in this situation?

Dr. Bean: In a patient of this sort, by the time one tapped the pericardium, with blood under high pressure leaking into it, he would be fighting a lost battle. Unless one can actually do a surgical repair, tapping will do little good.

Where there is a tamponade caused by a heart perforation—a bullet wound, an ice-pick wound or something of the sort—tapping might have great importance. One might conceivably help a patient with a slow leak from dissecting aneurysm, but it rarely would do any good. Our patient certainly would have died anyway.

Theoretically, I think it might help, but from a practical point of view, I know of no evidence that it does, and I think it would be most unusual.

One or two last words. This is Shennan's clas-

sical monograph on dissecting aneurysm, published by what was then "His Royal Majesty's" Stationery Office, in London in 1934. I think it is still in print, and if you are anxious to get it, the cost is 2s 6d. It is one of the best half-dollar investments that you could possibly make. Here also is a copy of Lodwick's paper, and here is a copy of Wood and Pendergrass's original paper on the x-ray in dissecting aneurysm. Then, there's a recent monograph from MEDICINE, published in 1958, which beautifully summarizes the current status for the surgical phase which is still developing.

SUMMARY OF NECROPSY FINDINGS

The chief autopsy findings were related to the aorta, heart and lungs. The aorta exhibited a severe atherosclerosis associated with extensive medial necrosis. This resulted in a dissecting aneurysm that extended from the origin of the vessel at the aortic valve to the bifurcation, including a short segment of the right common iliac artery. No evidence of vascular rupture was encountered, but a significant hemopericardium (610 cc.) was found, sufficient to result in cardiac tamponade. This was interpreted as representing the immediate cause of death.

The lungs were diffusely collapsed, and only small aerated areas were noted in the upper lobes. The bronchial tree contained small amounts of mucus, but it was patent throughout. The liver was mildly enlarged, and microscopic examination revealed a diffuse central lobular necrosis.

Marginal findings are listed in the necropsy diagnoses.

A postmortem laboratory investigation disclosed a positive Reiter protein complement fixation test. This implies the existence (present or past) of syphilis. Histologic support for syphilitic aortitis being lacking, it seemed reasonable to assume that the positive test was a coincidental finding, and that syphilis had not been the cause of the dissecting aneurysm.

NECROPSY DIAGNOSES

1. Dissecting aneurysm of the aorta due to medial necrosis, with hemopericardium and cardiac tamponade
2. Severe atherosclerosis, aorta
3. Bilateral pulmonary collapse
4. Diffuse central lobular necrosis of the liver
5. Left ventricular hypertrophy
6. Splenic infarction, multiple and diffuse
7. Bilateral arteriolar nephrosclerosis
8. Atrophy, right testis.

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CIVIL DEFENSE CONTROL CENTER

We are all concerned about our individual safety when health is involved, but the majority of us, I feel, have assumed a "Let George Do It" attitude when it comes to the Civil Defense Program. I can classify myself as one of the "Let George Doers," but a recent experience changed my thinking.

Some months ago, I had a conducted tour of a Civil Defense Control Center. That in itself is not remarkable, but I felt that the Center itself was. We approached the area through a National Guard Unit Post to the foot of a mountain. We rode up over a rise to a smaller plateau, and then proceeded on foot. At the base of the mountain, a flight of defense unit in the center of the mountain occupied an excavation of 104,000 cubic feet. It had been blasted out of the solid mountain granite, and had an over-all length of 118 feet. This excavation housed the main building of the Center. This building had an over-all length of 95 plus feet, and its width was 52 plus feet. Its walls of solid concrete varied from 12 to 24 inches in thickness with a roof of 36 inches of solid concrete. Between the walls and roof of the building, and the limits of the excavation was an air-space or run-way of about three feet in width which could cushion the walls against falling rock in event of a direct hit. The building has 18 rooms with a capacity to house 100 persons. There is stored here food, water, and fuel to supply its inhabitants for 30 days. As a control center, its connections to the outside world are supplied by 9 trunk telephone lines; 18 units of radio equipment, and it has its own emergency power plant to handle everything but heat.

As you tour this structure, you see the two-level control rooms with booths for all key personnel over-looking a detailed map of the area painted on the entire floor space below. Each key station maintains communication to their respective units in the outside world. You see the well-set up radio room where the "ham operators" will take over if the regular communication systems are destroyed. You see the sleeping quarters and the dining room with the adjoining kitchen equipped with all modern appliances. At each emergency entrance, you see the showers used to remove the radio active material on persons exposed before they can enter the building. You see the new clothing they put on after they have discarded their worn exposed clothing. You meet the personnel who cover each 24 hour vigil.

After a two hour exposure to this set-up, you are not apathetic anymore. These people are not playing games. They are in a target area, and they know it. They have done something about it.

C. L. Oppegaard, M.D., President, Minnesota State Medical Association.
MINNESOTA MEDICINE, **44**:294-295, (July) 1961.

Coming Meetings

In State

Sept. 25-26	**Thirteenth Annual Meeting and Scientific Assembly, Iowa Chapter of the American Academy of General Practice.** Savery Hotel, Des Moines

Out of State

Aug. 2-6	**Postgraduate Course, General Pediatrics, University of California, Los Angeles.** University Conference Center, Lake Arrowhead
Aug. 6-9	**Postgraduate Course, Advanced Seminars in Internal Medicine, UCLA.** University Conference Center, Lake Arrowhead
Aug. 6-17	**Reconstructive Surgery of the Nasal Septum and External Pyramid (Department of Otolaryngology, Mayer de Rothschild, Hadassah University Hospital and the Hebrew University-Hadassah Medical School of Jerusalem, in cooperation with the American Rhinologic Society).** Jerusalem, Israel
Aug. 6-18	**Course in Medical Genetics.** Bar Harbor, Maine
Aug. 7-10	**National Medical Association, Inc.** Commodore Hotel, New York City
Aug. 7-12	**Hepatic Pathology.** University of Colorado Medical Center, Denver
Aug. 21-24	**31st annual meeting of the Biological Photographic Association.** Hotel Knickerbocker, Chicago
Aug. 21-25	**Clinical and Research Advances in Pediatrics and Child Guidance Problems (University of Colorado School of Medicine).** The Stanley Hotel, Estes Park, Colorado
Aug. 26-29	**American Podiatry Association. Americana** Hotel, Miami Beach, Florida
Aug. 27	**American Association of Electromyography and Electrodiagnosis.** Hotel Sheraton-Cleveland, Cleveland, Ohio
Aug. 27-Sept. 1	**American Congress of Physical Medicine and Rehabilitation.** Hotel Sheraton-Cleveland, Cleveland, Ohio
Sept. 4-7	**10th International Congress on Rheumatoid Diseases.** Rome, Italy
Sept. 5	**Flying Physicians Association, Inc.** Holiday Hotel, Reno, Nevada
Sept. 8-Nov. 10	**Occupational Medicine.** New York University Postgraduate Medical School, New York City
Sept. 11-16	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 11-22	**Intensive Review of Internal Medicine.** University of Southern California, Los Angeles
Sept. 13	**First Professional Kidney Symposium (National Kidney Disease Foundation).** Ambassador Hotel, Los Angeles
Sept. 14-16	**American Association for Automotive Medicine.** University of Minnesota, Minneapolis
Sept. 14-16	**New England Society of Anesthesiologists.** Wentworth by-the-Sea, Portsmouth, New Hampshire
Sept. 14-16	**Obstetrics and Gynecology.** University of California, San Francisco
Sept. 14-17	**Second International Symposium on Chemotherapy.** Naples, Italy
Sept. 15	**Lederle Symposium.** Battenfeld Memorial Auditorium, Kansas City
Sept. 15-20	**Fifteenth General Assembly of the World Medical Association.** Rio de Janeiro
Sept. 17-22	**American Fracture Association.** Shoreham Hotel, Washington, D. C.
Sept. 18-20	**Annual Fall Clinical Conference, Southwest Clinical Society.** Hotel Muehlebach, Kansas City
Sept. 18-21	**Pediatrics for Pediatricians. Center for Continuation Study.** University of Minnesota, Minneapolis
Sept. 18-22	**Internal Medicine, a Selective Review.** University of California, San Francisco
Sept. 18-23	**Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
Sept. 18-23	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 18-23	**Cardiopulmonary Disease (American College of Physicians).** Ohio State University Health Center, Columbus, Ohio
Sept. 18-30	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Sept. 18-30	**Gynecology, Office and Operative.** Cook County Graduate School of Medicine, Chicago
Sept. 23	**American Association of Hospital Consultants.** Atlantic City, New Jersey
Sept. 23-24	**American Association for Hospital Planning.** Atlantic City, New Jersey
Sept. 23-30	**Annual Otolaryngologic Assembly.** University of Illinois College of Medicine, Chicago
Sept. 24-29	**American Society of Plastic and Reconstructive Surgery.** Roosevelt Hotel, New Orleans
Sept. 25-28	**American Hospital Association's 63rd Annual Meeting.** Atlantic City Convention Hall, Atlantic City, New Jersey
Sept. 25-29	**Pathology of Diseases of Laboratory Animals.** Armed Forces Institute of Pathology. Washington, D. C.
Sept. 25-29	**Industrial Chest Diseases (American College of Chest Physicians).** Warwick Hotel, Philadelphia
Sept. 25-29	**Lower Extremities Prosthetics.** University of California at Los Angeles
Sept. 25-29	**Pulmonary Disease Seminar (University of Colorado).** Fitzsimons General Hospital, Denver
Sept. 26-29	**American Roentgen Ray Society.** Deauville Hotel, Miami Beach
Sept. 27-29	**American Association of Medical Clinics.** Barbizon-Plaza Hotel, New York City
Sept. 27, 28, 29	**Twelfth Annual Meeting of the Animal Care Panel, American Board of Laboratory Animal Medicine.** Statler Hilton Hotel, Boston
Sept. 28-30	**American Association for the Surgery of Trauma.** Drake Hotel, Chicago
Sept. 29-30	**A Clinic on Human Disabilities. University of California,** San Francisco
Sept. 29-Oct. 1	**Third International Conference of the International Medical Association for the Study of Living Conditions and Health.** St. Vincent, Aosta Valley, Italy
Sept. 30-Oct. 8	**American Society of Clinical Pathologists and College of American Pathologists.** Olympic Hotel, Seattle

Editorials

LAMENT

In reflecting upon the death of our eminent friend, Dr. Walter L. Bierring, we can find no more appropriate words than those of Shakespeare's Horatio, expressed at the death of another noble Dane:

Now cracks a noble heart. Good night, sweet prince,
And flights of angels sing thee to thy rest.

TELEVISION AND THE AMERICAN CHILD

A recent survey on the subject of television in the lives of our children* has presented some startling facts and has raised some serious questions. During a three-year study, the authors conducted a survey of 6,000 children and procured information from over 2,000 parents, teachers and school officials.

The explosion of television in this country is demonstrated by the fact that in 1949 there were just 100,000 television receiving sets in use in the United States, but at the end of 1959, there were 50,000,000. At the beginning of the 1950's about one in 15 homes were so equipped, but at the end of the decade, seven out of eight homes had receiving sets. Approximately 150,000,000 people arrange their lives around the magic screen.

Television dominates the non-school, non-sleep time of the American child. Between the ages of three and 16, he spends one-sixth of his time watching television. Thus he spends just as much time in front of the television set as he does in the classroom. It is now the greatest source of common experiences in the lives of children, and along with home and school, it has come to play a major part in the social training of the child.

Despite the fact that the television industry provides so-called children's hours, the survey reveals that first-graders devote 40 per cent of their viewing time to "adult" programs. The sixth-graders see nearly five times as many adult shows as children's programs.

The authors conclude that if a child has ample security and love, interests, friendships and healthful activities to fill his non-television hours, there is little chance that anything very bad will happen to him as a result of watching television. They feel that television, consequently, should neither be feared nor given a clean bill of health, but rather should be taken carefully into account as a new and important contributing factor in our children's upbringing. Because it is assuming a share in training children, for better or for worse, it imposes responsibilities upon parents, broadcasters, teachers and other persons who seek to influence children's lives.

The most pertinent questions resulting from the survey are raised in an excellent chapter by Dr. Lawrence Z. Freedman. He says, "Even more difficult to evaluate than its impact on mental health and delinquency is the perhaps most important problem of its relation to our national values and national character." Dr. Freedman points out that at this time television is inescapable in the United States, that it is ubiquitous, and that it is democratic. From just a few centers there is a steady stream of almost identical audio-visual communication into all parts of the country, into all strata of society and to virtually every age group. The social role of television has an importance that transcends that of the psychiatric questions that may arise. He concludes, "The challenge is threefold: (a) To sharpen the focus of our research, to study in depth and over time the effect of televiewing on the personalities of representative children as they develop in their environment. This requires the collaboration of clinicians and behavioral scientists. (b) To evaluate whether television degrades the American ethos, or reflects it. Is television an amusement-park distortion mirror reflecting a crazy character of ourselves—or is it a clear and accurate reflection of what we as a nation are and want to be? Finally (c) we must respond pragmatically and effectively to the implications of the results of these studies and evaluations."

Obviously, television producers will continue to give the public what it wants. The individual parent must assume responsibility for the part which television is to play in his or her home. Each father and mother must decide whether two, three or four hours each day devoted to watching television is what they want for their children. Will this extravagant use of time contribute to the youngsters' physical and mental health, their idealism, their industriousness, their character?

Are we fiddling while Rome burns?

When asked to suggest a subject for a thesis, Sir Henry Ogilvie replied, "Look around for some subject on which all are agreed, and start thinking for yourself. You will find you are on virgin ground."

* Schramm, Wilbur, Lyle, Jack, and Parker, Edwin B.: TELEVISION IN THE LIVES OF OUR CHILDREN. Stanford, California, Stanford University Press, 1961.

ETIOLOGY OF PULMONARY EMPHYSEMA

Pulmonary emphysema is a disease characterized pathologically by loss of elastic tissue and destruction of alveolar walls in the lungs, leading to the formation of enlarged air sacs. The physiologic abnormalities include uneven distribution of inspired air, expiratory airway obstruction, loss of alveolar capillary surface available for diffusion, reduction in the vascular bed, and eventually pulmonary hypertension and cor pulmonale. Generalized pulmonary emphysema can be primary or it can exist secondary to disorders such as bronchial asthma, bronchiectasis, tuberculosis, silicosis, and other types of chronic lung disease. This discussion concerns the primary form of the disease.

The most commonly held concepts in regard to pathogenesis of this disease are: 1) that it is secondary to chronic bronchitis; 2) that it represents disease of the bronchial circulation in the lung; and 3) that it is a defect in the supporting and elastic tissue of the lung, on either a congenital or a toxic basis. The most popular and least likely concept is that emphysema is secondary to chronic bronchitis. Chronic cough and infection in the bronchi are said to lead to destruction of lung tissue, overdistention of the lungs, and the classical picture of emphysema. A more reasonable explanation is that chronic bronchitis is one of the early symptoms of pulmonary emphysema, particularly in places such as England, where the climate is damp and foggy. In their industrial areas the English enjoy the influence of fog and smog, which helps to make the diseased tracheobronchial tree an ideal cultural site for bacteria. In Iowa, where the climate is often dry, fog and smog are a rarity, and where the population is spread out, severe bronchitis as an early manifestation of emphysema is unusual.

A second possibility is that pulmonary emphysema represents disease of the bronchial circulation. Man and the horse are the only two mammals afflicted with pulmonary emphysema, and both are blessed with a double blood supply to the lungs. Experimental emphysema in the horse has been produced by the ligation of the bronchial arterial system. In man, the postulated series of events is occlusive disease of the bronchial arteries, with emphysema as the secondary manifestation. Bronchial-artery occlusion could have many causes.

A congenital or acquired defect of the supporting and elastic tissue has been postulated as the cause for emphysema. Among the toxins which have been suggested is cigarette smoke. Many patients with severe pulmonary emphysema have been heavy smokers for many years, but some patients with severe emphysema are nonsmokers. Thus, the relationship between smoking and emphysema needs further study.

Several facts about emphysema will have to be explained by any etiologic theory. The disease occurs almost exclusively in males. It most often occurs in middle age or later, but it does occur in young adults (men in their 20's or 30's). There are changes in the entire tracheobronchial tree and a loss of alveolar capillary membrane. Within the last few years, there has been considerable interest in the structure, physiology and biochemistry of the supporting tissues in the lung. Much remains to be learned from these studies. Most of the explanations offered in regard to the etiology of this disease are probably either completely in error or are gross oversimplifications of the real problem.

THE MANAGEMENT OF CHRONIC URINARY DRAINAGE PROBLEMS

The problem of maintaining prolonged drainage of the bladder in patients with spinal cord injuries has taxed the best efforts of urologists and others interested in the rehabilitation of these unfortunate individuals. Calculus formation, pyelonephritis and sepsis are common and serious complications of prolonged urinary drainage difficulties.

Sohn and Persky* have reported the results they have achieved with the prophylactic use of sulfadimethoxine,** a new, long-acting sulfonamide, in the management of such patients. Sulfadimethoxine is of low toxicity and has sustained chemotherapeutic activity *in vivo*. It exhibits antibacterial activity, and after a single dose it has a comparatively long duration of drug concentration in the blood and tissues of animals. Blood levels reached a maximum 12 hours after oral administration. It is excreted slowly, and more than 80 per cent is recovered in the urine.

The clinical study consisted of the daily administration of sulfadimethoxine to 22 patients with cord bladder difficulties. A group of 24 patients with quadriplegia or paraplegia served as controls and were given antibacterials only according to need. The dosage of sulfadimethoxine was 0.1 Gm. on the first day, and 0.5 Gm. daily thereafter over a period of slightly more than 12 months. The usual precautions in the use of sulfa therapy were observed.

The incidence of frank urinary sepsis, as evidenced by fever, increased pyuria and malaise, was reduced one-half in the drug-treated group, as compared with those who were not treated. Calculus formation during the study period was much less in the patients receiving the drug than in the control group. The bacteria encountered include paracolon bacillus, Aerobacter aerogenes, Proteus vulgaris and Pseudomonas aerugenosa. All of the organisms were resistant to sulfadimethoxine in all *in vitro* cultures and sensitivity tests. Repeated laboratory studies were made in an effort to detect evidence of drug toxicity, but no manifes-

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* Sohn, H., and Persky, L.: Sulfadimethoxine use in chronic urinary drainage. SURGERY, 82:719-722, (May) 1961.
** Madibron® (Hoffman-LaRoche, Inc., Nutley, N. J.).

tations of toxicity were found. One patient developed a leucopenia of 3,200/cu. mm. The drug was discontinued, and when it was resumed, leucopenia did not recur.

Sohn and Persky concluded that sulfadimethoxine prophylaxis results in a lower incidence of overt urosepsis and stone formation in the experimental group than occurred in the control group over the year-long period of the study. The other advantages are the ease of administration, low toxicity and economy. Clinical results were good despite the fact that *in vitro* tests had shown the bacteria to be resistant.

COIN LESIONS OF THE LUNG REQUIRE PROMPT ATTENTION

The significance and the management of patients in whom roentgenologic screening has revealed an abnormal area of density in the lung has been strongly emphasized by Richard H. Overholt in a recent editorial comment.*

The high contrast of the air-filled lung permits the demonstration of density changes not only of large or medium size, but also of sizes so small as to be measurable in millimeters. Frequently the shadow is round and covers approximately the area of a dime, nickle, quarter or 50-cent piece—hence the term *coin lesion*. Ordinarily, the presence of the abnormal lung shadow is unaccompanied by either symptoms or objective physical findings, and consequently it is often spoken of as a "silent lesion."

Unfortunately, the smaller the lesion, the greater is the tendency of physicians to procrastinate about doing something about it. In the past, such lesions have been followed by serial films so as to permit time to demonstrate progression or regression. With the marked decrease in the incidence of tuberculosis and the alarming increase in cancer of the lung, management practice must change. A waiting period of a few weeks may be justified, but a delay of two, three or six months is not.

The cancer potential of each true shadow must be weighed as soon as phantom shadows or artifacts have been eliminated. It will vary, depending upon the patient's age, sex and smoking history. In adults with unexplained solitary single densities, the yield of cancers will run between 30 and 50 per cent. If excision is done soon after the discovery film, more than half of the patients with silent pulmonary cancer will show no demonstrable extension beyond the original site. The five-year survival figures for localized cancer have been in excess of 50 per cent.

There is very little reason for confusion or hesitation. A mass in the lung should be managed like a mass in the breast. The direct approach is recommended because it is quick, sure and safe. The operative mortality is extremely low—just one per cent, more or less. To procrastinate about a coin lesion is to take an unfair gamble. The risk and potential should be frankly discussed and honestly balanced for the patient. If there is to be a delay, it is the patient—not the doctor—who should have the choice of playing Russian roulette with three bullets in the sixshooter, or of agreeing to have surgery.

* Overholt, R. H : Editorial, "The Guess and the Gamble." SURG., GYNEC. & OBST., **112**:750, (June) 1961.

HOSPITALS SHOULD STRIVE FOR "CONSUMER SATISFACTION"

A letter from a British physician in a recent issue of THE LANCET* emphasizes the need for "consumer satisfaction" in hospitals. She points out that "organization and method" could do much to avoid waste of time, and the time so saved could be spent on being polite. Haste and familiarity, she considers the two most powerful factors in causing the hospital staff to treat patients and their visitors as somewhat less than human beings. She realizes that it is difficult at times to be polite when the next job is clamoring to be done, and the staff may appear callous because they are accustomed to things with which patients are unfamiliar. It is easy to forget that patients may even be a little frightened. She suggests that best results will not be obtained until the three constituent groups that compose the hospital team—administrators, physicians and nurses—abandon their attitudes of mutual suspicion and criticism, and consciously seek to cooperate.

The same criticism is applicable in many of the hospitals in the United States. The cooperative effort that she has suggested would have a salutary result in all institutions.

The uninitiated patient enters the strange world of the hospital—the noisy quiet, the unaccustomed sounds, the foreign odors—to a new and unpleasant experience. He is ill, assailed by doubt, worried about the expense, unfamiliar with procedures, fearful of the future. He expects and is entitled to skilled medical or surgical care, but he also expects and is entitled to civility, courtesy and kindness. He should be referred to by name, rather than spoken of as "the case in room 329."

Though hospital visitors are often considered necessary nuisances, they too should be given courteous treatment and not be herded like sheep. It is they who convey the hospital's image to the remainder of the public, and it behooves any institution to accord them a friendly reception. Their inquiries are entitled to honest answers. Cordiality enhances public relations.

Administering a hospital, with all the ancillary services that are related to the care of the sick, is a complex and difficult task. It requires the integrated efforts of many people, professional and oth-

* Gibson, A.: Human relations in hospitals. LANCET, **1**:-1112, (May 20) 1961.

erwise skilled. It calls for dedicated service from the physician, the nurse, the aide, the cook and the maid. Suspicion and conflict demoralize any organization. Jurisdictional disputes have no place in any institution devoted to the care of the sick. Careful screening of applicants and thorough job-training are essential. Politeness and the art of being friendly need special stress. Hospital public relations depend basically upon the relationships between personnel and patients. Bored indifference cannot fail to alienate the patient and his visitors.

The attainment of high goals requires old-fashioned idealism and dedication. It is reasonable that in any hospital the physician should be expected to set an example of friendly and selfless service. In certain hospitals, the character and philosophy of one eminent physician has shaped the caliber of service and has lifted it to inspired heights.

Courtesy, gentleness and kindliness prompt respect and cooperation. Most of us find it far too easy to criticize, and voice praise and encouragement to our associates far too infrequently. Each physician should constantly reexamine his role in the performance of the hospital.

EFFECT OF CIGARETTE SMOKE*

An impressive body of literature has accumulated to support the thesis that prolonged heavy cigarette smoking is positively related to the increased incidence of bronchogenic carcinoma. If the combustion products in tobacco smoke contain carcinogenic tars (or arsenic), how does this substance collect in the bronchi and remain sufficiently long to induce a carcinoma?

Normally, the respiratory cilia are most efficient in keeping the nose and the bronchial air tubes clean. The cilia of the lower respiratory tract are in constant motion, day and night, sweeping the overlying blanket of mucus toward the upper end of the esophagus. In the nose, the action of the cilia moves the mucous blanket posteriorly to the pharynx.

The question arose whether or not there was some substance in cigarette smoke that caused a stasis of the ciliary cleansing mechanism. An attempt was made to measure ciliary activity in an isolated epithelial strip and in vivo.

In the method used by me, minute bits of epithelium taken from the trachea and bronchi of humans are placed in a clot (equal parts of chick embryo extract and chicken plasma) which is adherent to a cover slip. When properly made, the cilia can be seen through the microscope to be beating furiously, and will continue beating for two weeks or longer with no further attention. At any time, the cover slip and clot may be transferred to a perfusion chamber, the experimental solution may be perfused, and the effect on the cilia observed and recorded on moving-picture film.

Sometimes immediately and sometimes some hours later, aggregates of ciliated cells can be seen through the microscope to have become detached from the main explant to form an irregular rounded mass with the cilia outward. The furiously beating cilia cause the separate aggregate of cells to rotate 6 to 30 times per minute. The rotation serves as a convenient quantitative criterion of ciliary activity.

The test solution for these experiments was prepared as follows. Two "regular"-sized cigarettes were mechanically "smoked" by intermittent drawing of room air through the cigarettes at a rate of 1 liter per minute. The smoke was allowed to escape under the surface of 100 ml. of the basic salt solution. A sintered glass filter was used to insure good contact of the smoke and the solution. Glass-wool filters were inserted in two locations to prevent gross particulate tobacco from reaching the basic salt solution. In successive experiments, cigarettes both with and without "filters" were used.

Perfusion with the basic salt solution alone caused no appreciable change in the rotation of the aggregates of ciliated cells. If left undisturbed, rotation would have lasted for 36 to 48 hours. Perfusion with "smoked" basic salt solution stopped rotation within five to 28 minutes in 12 consecutive experiments. In some cases, if the exposure to the "smoked" basic salt solution was terminated before the toxic effect was marked, a return to the baseline speed of rotation could be produced by reperfusion with salt solution alone.

The present experiments demonstrate how the human ciliary mechanism fails in vitro when exposed to smoke in solution from as few as two cigarettes. The failure of the ciliary mechanism was irreversible if great care was not taken very soon to remove the "smoked" basic salt solution. It is suggested that this is one of the mechanisms whereby tars may collect in the lower respiratory tract and come into contact with the mucosa.

Further experimental work is currently going on to determine whether combusion products of petroleum, factory gaseous wastes, and so forth, have similary deleterious effects on the cilia.

It seems likely that the decreased efficiency of the ciliary mechanism caused by smoke plays a part in the productive cough noted by smokers. If the cilia do not keep the airway clean, the blanket of mucus containing foreign material collects and eventually initiates the cough reflex.

* Abstract of Ballenger, J. J.: Experimental effect of cigarette smoke on human respiratory cilia. NEW ENGLAND J. MED., Oct. 27, 1960.

CORRECTION

Because of a typographical error, Dr. Lewis L. Zager, Waterloo was omitted from the 1961 IMS Roster in last month's JOURNAL.

Physicians Can Improve Their Effectiveness in

Health Careers Recruitment

Doctors and other civic leaders throughout Iowa clearly recognize the necessity of recruiting trainees for each of the health services. Like the rest of the United States, Iowa needs more physicians, more nurses, more dentists, more physical therapists, more bacteriologists and more laboratory technicians. Now that the physical sciences have become glamorous, larger numbers of talented young people are preparing themselves for those fields of endeavor, and fewer of them, proportionally, are choosing the biological sciences.

Having recognized the necessity for persuading boys and girls that the health occupations offer satisfactions at least equal to those that are to be found in other lines of work, doctors must see that some salesmanship is required of them. Once a year, in response to an invitation, at least one physician in every town has gone to his community's high school to participate in "careers day," but that annual appearance is no longer enough—if indeed it ever did influence a boy who hadn't already made up his mind to study medicine.

THOUGH NOT DESPERATE, IOWA'S SITUATION IS SERIOUS

In awakening or encouraging medical-school ambitions, Iowans should have twin objectives—dispelling youngsters' beliefs that a M.D. degree is very nearly impossible of attainment, and inculcating an ambition in them to prepare for lives of service to small towns and rural areas where doctors are needed most.

There are some respects in which Iowa's situation isn't yet alarming. As Dr. Eugene Van Epps pointed out in his presidential address at the annual meeting of the Iowa Medical Society last April, the S.U.I. College of Medicine hasn't had to accept any marginally qualified candidates for entrance, despite the fact that applications for medical-school admission have declined 40 per cent nationally in recent years. Similarly, though the drop-out rates at many other medical schools have been increasing, the rate at S.U.I fell just a bit last year.

But there is no assurance that S.U.I. can continue attracting enough promising medical-school applicants, and unless the smaller communities in the state imbue more of their youngsters with a determination to study medicine *and to return to practice it in communities like those where they lived as boys,* Iowa will continue exporting more young physicians than it attracts from other states. Marshalltown and Cedar Rapids are two large towns where remarkable proportions of the physicians are men who returned to practice precisely where they grew up, and smaller towns perhaps should endeavor to match their record. Dr. Van Epps went on, in his address last April, to warn doctors against being content with things as they are. He urged them to make medical-student recruitment one of their major public service projects.

Persuading girls to study nursing and to practice it in Iowa is an equally vital undertaking. Doctors' wives, as members of the IMS Woman's Auxiliary, are steadily increasing their efforts in this direction, and they will be glad to have phy-

sicians participate. In 1959, a survey made by the Iowa League for Nursing and the Iowa Nurses Association, under the auspices of the IMS Committee on Nursing Education and Service, revealed that if Iowa were to have as many registered nurses as it is certain to need in 1970, the number of its trainees would have to be increased by 75 each year for 10 years. Further, the survey showed that during the preceding six years, twice as many registered nurses had left the state as had entered it. As yet, there are no indications that either of these problems is well on the way toward solution.

As for the other health professions, much the same things must be said. A recent study showed that the shortage of dentists is more acute than the shortage of physicians, in all but the most heavily populated parts of Iowa. Physical therapists are being sought by the rehabilitation centers that are starting operation throughout the state. New procedures such as cytology screening and older ones such as blood processing are requiring added personnel, and the opportunities in x-ray technology are still very good.

PROMISING RECRUITMENT TECHNICS

When a doctor has decided to lend his assistance in medical-student recruitment—or even before he has fully made up his mind to do so—he should have a talk with his community's superintendent of schools, or with its college president if it has a college. Together, they can decide upon the type of campaign that will best fit into the students' schedule of extracurricular activities. The doctor won't be left to work unaided, for the health professions are ones for which school people are glad to help persuade students to prepare themselves.

If the school's annual "careers day" is the only opportunity that the doctor can have for presenting the attractions of medicine as a vocation, he should make the most of it by showing one or more professionally filmed motion pictures, as well as by talking to the youngsters who assemble to hear him.

But it is a rare high school or college that cannot provide the physician as many appearances as he can find time to make, provided only that he is a capable speaker. High schools have math-science clubs composed of students who are excelling in those subjects, and their faculty advisors will welcome a doctor's offers to conduct tours of hospitals or to give illustrated lectures.

Wherever possible, however, following the pattern set by the IMS Woman's Auxiliary with its Future Nurses' Clubs, the physician should help organize a Future Doctors' Club, and not only should help plan its programs but also should attend its meetings as regularly as possible. Very few young people ever have resolved to undertake the long, hard struggle toward a M.D. degree after hearing just one speech or seeing just one film. Even two or three speeches or movies aren't enough. Youngsters must be familiarized with the road that lies ahead of them; they must become rather well acquainted with at least one man who has reached the goal; and they must begin feeling that they can achieve it, too.

The classmates of each student who is really active in a Future Doctors' Club will begin addressing him, half-mockingly, as "Doctor," but their doing so will not embarrass him particularly. On the contrary, he is then all the more likely to persevere—through the courses in physiology, anatomy, pharmacology and the rest—until he has won the right to put the letters "M.D." after his name. When a young man feels that he stands committed, in the eyes of his peers, to succeed in the study of medicine, he has acquired the strongest incentive that he can possess!

RECRUITMENT MATERIALS ARE BECOMING PLENTIFUL

Recruitment materials are available from several sources, and new ones are constantly being devised. The IMS Subcommittee on Medical Careers is anxious to assist any physician or group of physicians who are interested in organizing or fostering Future Doctors' Clubs. The American Medical Association is ready to provide a portfolio entitled "Program Materials for Medical Careers, for High Schools, Colleges and Communities," describing motion pictures available on loan, and including a speech outline and some pamphlets of which additional copies can be secured for distribution to students and their parents.

Recruitment materials on both medicine and the other health vocations are available from the Iowa Interprofessional Association, an organization consisting of the nurses, hospital administrators, pharmacists, veterinarians, dentists and physicians, and from the New York Life Insurance Company.

Materials that have originated with any of these organizations other than New York Life can be secured through the Iowa Medical Society, 529 Thirty-sixth Street, Des Moines 12.

CONCLUSION

Just as in all other activities, the key to success in health-careers recruitment is the innovator's willingness to devote time and effort to the project, in considerable quantities and at regular intervals. He must persevere. A one-shot undertaking is unlikely to produce visible results, but neither is a series of programs at which the physician makes an initial appearance and then is seen no more. What he says will have a certain amount of importance, but his regular attendance, his approachability, and his clearly evident and long-sustained interest in the youngsters and in their ambitions will be far more significant.

Actions of the AMA House of Delegates

New York City, June 25-30, 1961

F. J. L. BLASINGAME, M.D., Executive Vice-President

NEW YORK, June 30—Osteopathy, medical discipline, communications, surgical assistants, drug legislation, general practice residencies, relations with allied health professions and services, and poliomyelitis vaccine were among the major subjects covered by 115 resolutions and 28 reports acted upon by the House of Delegates at the American Medical Association's 110th Annual Meeting held June 25-30 in New York City.

Dr. George M. Fister of Ogden, Utah, member of the AMA Board of Trustees and previously a member of the House of Delegates, was named president-elect of the Association. Dr. Fister will become president at the June, 1962, annual meeting in Chicago, succeeding Dr. Leonard W. Larson of Bismarck, North Dakota, who assumed office at the Tuesday night inaugural ceremony in New York.

The AMA 1961 Distinguished Service Award was voted to Dr. Walter H. Judd of Minneapolis, physician and member of Congress, for his contributions as a medical missionary, humanitarian and statesman devoted to world peace.

Total registration through Thursday, with half a day of the meeting still remaining, had reached 56,315, including 22,681 physicians.

OSTEOPATHY

In considering a report of the Judicial Council and three resolutions on the subject of osteopathy, the House of Delegates agreed with the intent of the report and resolutions, but instead adopted the following statement of AMA policy:

"1. There can never be an ethical relationship between a doctor of medicine and a cultist, that is, one who does not practice a system of healing founded on a scientific basis.

"2. There can never be a majority party and a minority party in any science. There cannot be two distinct sciences of medicine or two different, yet equally valid systems of medical practice.

"3. Recognition should be given to the transition presently occurring in osteopathy, which is evidence of an attempt by a significant number of those practicing osteopathic medicine to give their patients scientific medical care. This transition should be encouraged so that the evolutionary process can be expedited.

"4. It is appropriate for the American Medical Association to *reappraise its application of policy* regarding relationships with doctors of osteopathy, in view of the transition of osteopathy into osteopathic medicine, in view of the fact that the colleges of osteopathy have modeled their curricula after medical schools, in view of the almost complete lack of osteopathic literature and the reliance of osteopaths on and their use of medical literature, and in view of the fact that many doctors of osteopathy are no longer practicing osteopathy.

"5. Policy should now be applied individually at state level according to the facts as they exist. Heretofore, this policy has been applied collectively at national level. The test now should be: Does the individual doctor of osteopathy practice osteopathy, or does he in fact practice a method of healing founded on a scientific basis? If he practices osteopathy, he practices a cult system of healing and all voluntary professional associations with him are unethical. If he bases his practice on the same scientific principles as those adhered to by members of the American Medical Association, voluntary professional relationships with him should not be deemed unethical."

MEDICAL DISCIPLINE

In a major move designed to strengthen the profession's disciplinary mechanisms, the House approved the conclusions and recommendations of the Medical Disciplinary Committee, with only three word changes. The House discharged the Committee with thanks and commendation and directed that its functions be assumed as a continuing activity by the Judicial Council.

One recommendation suggests that "The bylaws of the American Medical Association be changed to confer original jurisdiction on the Association to suspend or revoke the AMA membership of a physician guilty of a violation of the Principles of Medical Ethics or the ethical policy of the American Medical Association regardless of whether action has been taken against him at local level."

Another "encourages and urges that each state medical society report annually to the American Medical Association all major disciplinary actions taken within its jurisdiction during the preceding calendar year."

The report urged state and county medical societies to utilize grievance committees as "grand juries" to initiate action against an offender so as to obviate the necessity of making an individual member of a medical society complain against a fellow member.

The House suggested that each medical school develop and present a required course in ethics and socio-economic principles, and that each state board of medical examiners include questions on

ethics and proper socio-economic practices in all examinations for license.

The report concluded with a recommendation that "American medicine at the national, state and local level maintain an active, aggressive and continuing interest in medical disciplinary matters so that, by a demonstration of good faith, medicine will be permitted to continue to discipline its own members when necessary."

PUBLIC RELATIONS

Acting upon four resolutions related to the Association's public relations program, the House adopted a substitute resolution directing the Speaker of the House of Delegates to name seven elected members of the House as a special committee "to study and continually advise the Board of Trustees on the broad planning and coordination of all phases of communications of the American Medical Association, so that the public and the members of the medical profession are properly and adequately advised of the policies and concern of the medical profession with respect to all phases and aspects of medical care for all people."

The House agreed with a reference committee opinion that "we have a very adequate Division within the AMA capable of implementing any program of communications." The approved committee report also said that "the Communications Division of the AMA needs the active support and cooperation of the House and of all members of the Association."

SURGICAL ASSISTANTS

In considering a Board report and two resolutions on the subject of surgical assistants' fees, the House approved the following five basic principles developed by the Judicial Council and the Council on Medical Service:

"1. Each member of the AMA is expected to observe the Principles of Medical Ethics in every aspect of his professional practice.

"2. Each doctor engaged in the care of the patient is entitled to compensation commensurate with the value of the services he has personally rendered.

"3. No doctor should bill or be paid for a service which he does not perform; mere referral does not constitute a professional service for which a professional charge should be made or for which a fee may be ethically paid or received.

"4. It is ethically permissible for a surgeon to employ other physicians to assist him in the performance of a surgical procedure and to pay a reasonable amount for such assistance.

"This principle applies whether or not an assisting physician is the referring doctor and whether he is on a per-case or full-time basis. The controlling factor is the status of the assisting physician. If the practice is a subterfuge to split fees or to divide an insurance benefit, or if the physician is not actually employed and used as a bona fide assistant, then the practice is contrary to ethical principles.

"5. Under all other circumstances where services are rendered by more than one physician, each physician should submit his own bill to the patient and be compensated separately."

EFFICACY OF DRUGS

The House strongly endorsed a Board report which pointed out the problems that would result from amending the Food, Drug and Cosmetic Act to authorize the Food and Drug Administration to determine the efficacy, as well as the safety, of a prescription drug prior to the approval of a new drug application. The AMA will oppose such legislation before the Kefauver Committee, the report pointed out, on the basis that "a decision with respect to the effectiveness of drugs is dependent upon extended research, experimentation and usage." The House agreed that vesting such authority in the Food and Drug Administration would operate to limit research, the marketing of drugs and the exercise of discretion by the medical profession. "The marketing of a relatively useless drug is infinitely less serious than would be the arbitrary exclusion from the market of a drug that might have been life-saving for many persons," the House declared.

GENERAL PRACTICE RESIDENCIES

Eight resolutions were introduced on the subject of creating new two-year, residency training programs in general practice. The House agreed that there appears to be a need for such programs for those individuals who desire more experience in obstetrics and surgery than may be available in the currently existing Family Practice Program. It approved a substitute resolution directing the Council on Medical Education and Hospitals to consider for approval other two-year programs in general practice which incorporate experience in obstetrics and surgery. The Council will review these programs on the basis of their individual merits and conduct a long-range evaluation of the new programs as well as the previously established Family Practice Programs.

RELATIONS WITH OTHER HEALTH PROFESSIONS AND SERVICES

The House considered a Board report and twelve resolutions dealing with various aspects of medicine's relationships with allied health professions and services, including optometry. The Board report recommended the creation of a new AMA Council to handle all the problems involved. The House, however, accepted a reference committee suggestion for establishment of a new Commission to Coordinate the Relationships of Medicine with Allied Health Professions and Services. The Commission will be composed of seven members appointed by the Speaker of the House. Subcommittees, composed of from three to five members

selected by the Commission from lists of names submitted by the scientific sections, will consider problems in specific areas. The Commission will correlate and catalog the reports of the subcommittees and will act as liaison agent between the subcommittees and those AMA councils where there may be overlapping interests.

POLIO VACCINE

The House approved a report by the Council on Drugs on the present status of poliomyelitis vaccination in the United States and urged that it be made available to all physicians through the most effective communications media. The report clearly outlines procedures recommended for implementation of mass vaccination with the new oral vaccine when it becomes available. The House complimented the Council on its "clear and succinct statement on the initiation of the new campaign which will be needed to promote the new vaccine." The House agreed that the report provides the practicing physician with a reliable series of answers to the many questions which will arise during the change-over from Salk vaccine to oral vaccine. The report emphasizes, however, that "physicians should encourage, support and extend the use of Salk vaccine on the widest possible scale at least until the oral polio-virus vaccines currently under development and clinical trial become available."

MISCELLANEOUS ACTIONS

In dealing with resolutions and reports on a wide variety of other subjects, the House also:

Approved the *Guides to Physician Relationships With Medical Care Plans* submitted by the Council on Medical Service, with these two changes: deletion of item 5 under "Responsibilities of the Medical Society," which said "To recognize that properly qualified physicians employed by, or otherwise serving, medical care plans should not be denied professional rights and privileges because of their service to such plans," and addition of a new item 1 under "Responsibilities of the Medical Care Plan," which reads: "To provide the beneficiary of the plan with free choice of qualified physicians";

Reaffirmed its support of the *Kerr-Mills* program for the needy and near-needy aged and its opposition to any legislation of the *King-Anderson* type, declaring that the medical profession "will not be a willing party to implementing any system which we believe to be detrimental to the public welfare";

Approved a markedly expanded *drug information program* submitted by the Board of Trustees and the Council on Drugs;

Decided to hold the *1963 Clinical Meeting* in Portland, Oregon, instead of in Las Vegas, Nevada, as recommended by the Board;

Agreed to an increase of $20 in the annual AMA *membership dues* to be implemented over a period of two years: $10 on January 1, 1962, and $10 additional on January 1, 1963;

Discontinued the Association's *General Practitioner of the Year* award;

Opposed legislative and administrative mandates which would compel physicians to prescribe drugs, or require pharmaceuticals to be sold, by *generic names* only;

Reaffirmed the Association's opposition to compulsory inclusion of physicians under the *Social Security* system;

Urged immediate legislation that will provide strong economic motivation for the construction and maintenance of *fallout shelters;*

Disapproved two resolutions which would have discontinued the scientific activities at the *Clinical Meeting;*

Urged *immunization campaigns* against both tetanus and influenza, and

Asked state and county medical societies to give full support to the *First National Congress on Medical Quackery* to be jointly sponsored next October 6-7 in Washington, D. C., by the AMA and the Food and Drug Administration.

ELECTION OF OFFICERS

In addition to Dr. Fister, the new president-elect, the following officers were named at the Thursday session:

Dr. Eustace A. Allen of Atlanta, Ga., vice president; Dr. Norman A. Welch of Boston, re-elected speaker of the House, and Dr. Milford O. Rouse of Dallas, Tex., re-elected vice speaker.

Elected to the Board of Trustees were Dr. Wesley W. Hall of Reno, Nev., to succeed Dr. Fister; Dr. Homer L. Pearson, Jr., of Miami, Fla., to replace Dr. Julian P. Price of Florence, S. C., and Dr. Charles L. Hudson of Cleveland, Ohio, to fill out the term of the late Dr. Cleon A. Nafe of Indianapolis. The Board named the following officers: chairman, Dr. Hugh Hussey of Washington, D. C.; vice chairman, Dr. Percy Hopkins of Chicago, and secretary, Dr. James Z. Appel of Lancaster, Pa.

Named to the Judicial Council were Dr. Robertson Ward of San Francisco, to succeed himself, and Dr. Elmer G. Shelley of North East, Pa., to replace Dr. Pearson.

Re-elected to the Council on Constitution and Bylaws was Dr. Walter E. Vest of Huntington, W. Va.

New Members of the Council on Medical Service are Dr. Charles Ashworth of Providence, R. I., succeeding Dr. Carlton Wertz of Buffalo, N. Y., and Dr. Burtis E. Montgomery of Harrisburg, Ill., to succeed Dr. Charles Hudson of Cleveland.

For the Council on Medical Education and Hospitals, Dr. Dwight L. Wilbur of San Francisco was elected to succeed Dr. John W. Cline of the same city, and Dr. Kenneth C. Sawyer of Denver, Colo., was named to succeed Dr. Guy A. Caldwell of New Orleans.

Iowa Chapter of the American Academy of General Practice

THIRTEENTH ANNUAL MEETING AND SCIENTIFIC ASSEMBLY

Hotel Savery, Des Moines
September 25-26, 1961

The Thirteenth Annual Meeting and Scientific Assembly of the Iowa Chapter of the American Academy of General Practice will be held at the Savery Hotel, in Des Moines, on Monday and Tuesday, September 25 and 26. The business session will not be held on the preceding Sunday, as has been the custom for several years, but will be incorporated with the Monday noon luncheon meeting in order that many more members will find it convenient to attend. In order to shorten the reading of reports, mimeographed copies of all pertinent reports will be available for study and action.

The report of the Nominating Committee will be published in the July/August issue of the HAWKEYE GP NEWS.

Thirty-six technical exhibitors will present displays. Plan to visit each and every booth, to learn about all of the new drugs that are available. Without the support of these exhibitors, our meeting could not be so beneficial. Time will be allotted each day for visits with the pharmaceutical manufacturers' representatives.

A hospitality room will again be available for the wives of members and guests, and they are most welcome to attend the scientific lectures.

The Annual Banquet will be held on Monday evening, and the dinner will be the buffet that proved so popular last year. On Tuesday, there will be a special luncheon with Dr. E. H. Rynearson, the famous Mayo internist, as the speaker. Everyone attending the meeting is cordially invited to attend this luncheon.

Registration will start at 8:00 a.m. on Monday, on the mezzanine floor of Hotel Savery. Luncheon and banquet tickets will be on sale and should be purchased at the time of registration. A total of 12 hours of Category I credit will be granted to Academy members who attend all of the sessions.

All Academy members are urged to attend, and all non-member physicians are most cordially invited. There will be a daily registration fee for non-members, but none for members, interns or ladies.

Monday, September 25

8:00 a.m. Registration
8:30 a.m. FILM: "External Cardiac Massage"
9:15 a.m. "Health Statuses and Needs of Older Iowans —A Report on the 1960 Survey of Life After Sixty"—W. W. Morris, Ph.D., associate dean of student affairs, S.U.I.
9:45 a.m. "Hand Injuries"—Adrian Flatt, M.D., assistant professor of orthopedic surgery, S.U.I.
11:00 a.m. "Common Syndromes Seldom Recognized" O. F. Rosenow, M.D., professor of internal medicine, Ohio State University
11:30 a.m. "Indications for Cardiovascular Surgery" —M. S. Lawrence, M.D., associate professor of thoracic surgery, S.U.I.
12:15 p.m. LUNCHEON AND ANNUAL BUSINESS MEETING
2:15 p.m. "Terminal Care of the Aged Patient"—Panel consisting of Ivan H. Sheeler, M.D., Marshalltown, James B. Dickens, M.D., Des Moines, and Dr. Rosenow
3:45 p.m. "Diagnosis of Carcinoma of the Lung"—Dr. Lawrence
4:15 p.m. "Athletic Injuries"—Dr. Flatt
4:45 p.m. PANEL DISCUSSION

Tuesday, September 26

8:30 a.m. FILM: "Resuscitation of the Newborn"
9:00 a.m. "Use and Function of Poison Centers"—E. A. Nitzke, M.D., Des Moines
9:30 a.m. "Persistent Occipital Posterior Presentation"—Kermit E. Krantz, M.D., professor of obstetrics and gynecology, University of Kansas School of Medicine
11:00 a.m. "Status of Immunity Today"—Alex J. Steigmann, M.D., professor of pediatrics at the University of Louisville
11:30 a.m. "Respiratory Emergencies in Anesthesia" —Jay Jacoby, M.D., professor of anesthesiology at Marquette University
12:15 p.m. LUNCHEON
"Learning to Like the Patient With Functional Disease"—E. H. Rynearson, M.D., Section of Internal Medicine, Mayo Clinic
2:00 p.m. ERNEST E. SHAW MEMORIAL LECTURE: "Forceps —To Use or Not to Use"—Dr. Krantz
2:45 p.m. "Therapy in Virus Disorders"—Dr. Steigmann
3:45 p.m. "The Iowa Trumpet"—Dan S. Egbert, M.D., Fort Dodge
4:15 p.m. "Circulatory Problems During Anesthesia" —Dr. Jacoby
4:45 p.m. "Use and Abuse of Hormones"—Dr. Rynearson

Iowa Association of Medical Assistants

INSTRUCTION ENDS IN THE CLASSROOM; EDUCATION ENDS ONLY WITH LIFE

The Medical Assistants Association believes that education must be continuous. We, the members of that organization, are employed by a profession that has made more progress in the past 30 years than in the previous 2,000. Its members are constantly improving themselves by attending postgraduate courses, by reading reports of the latest scientific advances and by studying the results that they themselves have achieved with alternative methods of therapy. The medical assistant realizes that if she is to be employed tomorrow, she can't care for today's business with yesterday's methods. She must make every effort to improve herself by learning the best ways of maintaining an orderly and efficient office, whether she is a receptionist, a bookkeeper, a secretary, a nurse, a laboratory technician, or a combination of all of these.

The national office of the Medical Assistants, in Chicago, has a compilation of educational material to which every chapter has access. We can get material on the formal courses of instruction at junior college or university levels sponsored by other states. (Iowa has such a program in its In-service Workshop at S.U.I.) We can get program suggestions—textbooks, lists of speakers, plans for symposia and workshops. We can get suggestions and plans for displays to exhibit at medical society meetings. (The booth material prepared by the Iowa Association for exhibit at the Iowa Medical Society meeting has been used in several other states.)

The IAMA Education Committee prepares short instructional articles for release to members through the component chapters. These are known as MYB's (Mind Your Business!). Some of the component chapters have adopted the idea, and prepare and publish such items of their own in their bulletins. Here are some of the topics that have been covered in this manner: poise and grooming, laboratory procedures, instructions to patients, telephone technics, collection of delinquent accounts, child psychology, letter writing, billing procedures, and the many facets of public relations.

The American Medical Association also releases special material to us for use in our publications. This keeps us informed about current medical legislation, methods of improving public relations, and many other subjects.

In an organization such as ours, where the duties of the members are varied, it is essential that the educational program be as diversified as possible. Each of our chapters has been addressed by outstanding speakers, and the members have had opportunities to tour laboratories and institutions of particular interest to paramedical groups. Foremost among our tours have been trips to the Eli Lilly Laboratories, in Indianapolis, and to the Upjohn Company, in Kalamazoo, Michigan. In addition, many of us have visited blood banks, radioisotope laboratories, schools for retarded and handicapped children, rehabilitation centers and mental health institutes. We have seen films on first aid, cancer detection, poison control centers, open heart surgery, plastic surgery, poliomyelitis and mouth-to-mouth resuscitation.

We have heard programs presented by social welfare directors, county nurses, county medical examiners, visiting nurse associations, and local public health officers, so that we might learn the relationship between each of them and the medical profession, and so that we might find out how we may assist them. Each of our chapters also has one meeting a year devoted to Civil Defense.

Legal aspects of medicine, parliamentary procedure, wills and finance for employed women, investments, communicable diseases, religion and medicine, hypnosis in childbirth, physiotherapy for the handicapped, and rehabilitation of the physically and mentally handicapped—these are only a few of the other topics that have been presented to IAMA members.

Our meetings also provide entertainment and relaxation. Films and slides of trips through Williamsburg, Virginia, other parts of Virginia, Alaska, Europe, Russia, Austria, Hawaii and the World's Fair in Belgium have been shown. And we have enjoyed the usual picnics, brunches and parties. We have taken our part in civic affairs by assisting with the various fund drives, donating free hours to the operation of hospital gift shops, and assisting with the distribution of NEW HORIZONS, a publication of the American Cancer Society.

"The aim of education should be to teach us to think—rather to improve our minds, so as to enable us to think for ourselves, than to load the memory with the thoughts of others."

Attend the Annual Meeting
AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS
Riverside Hotel, Reno, Nevada
October 13-15, 1961

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

SECOND EDITION OF DIET MANUAL NOW AVAILABLE

If the high level of nutritional well-being of our citizens can be maintained and improved where necessary, the health of our communities can be strengthened. One of the functions of the Division of Nutrition Service of the Iowa State Department of Health is to prepare reference material for carrying out a program of nutrition education, consultation and service. THE SIMPLIFIED DIET MANUAL is a part of that program.

The book was written specifically for physicians to use as a guide in prescribing modified diets, and many Iowa doctors have found it a reliable reference. The diet instruction sheets have been valuable to physicians in teaching modified diets to patients, and the manual received the approval of the Iowa Medical Society in 1958.

It was also written for use in small hospitals and nursing homes, in which there are no dietitians, and many such institutions in Iowa are using it.

The Second Edition has several points of interest to physicians:

- The bland and soft diets have been liberalized in line with the current thinking in the dynamic field of diet therapy.
- There are three fat-controlled diets.
- The regimes for sodium restriction, as outlined by the American Heart Association, have been included. Physicians will find the exchange lists for sodium content in foods a valuable reference as they instruct patients.
- A section on diet for children has been included.

THE SIMPLIFIED DIET MANUAL was prepared by the staff of the Nutrition Service in cooperation with the Iowa Dietetic Association. In June of this year, the Second Edition came off the press. Copies may be obtained direct from the publisher, Iowa State University Press, Ames, for $2.50 each.

INSTRUCTION FOR NURSING HOME AIDES

Iowa nursing home operators now can get special help in training their nursing aides.

Eight registered nurses who attended a special workshop on methods of training nursing aides are now ready to teach classes in the subject. The workshop, sponsored by the Iowa State Department of Health, was directed by Mrs. Frances S. Wolford, R.N., from the U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D. C.

A special manual, "How to Be a Nursing Aide in a Nursing Home," is available. Instruction includes demonstration, practice work and supervision of each nursing task.

Classes will be organized throughout Iowa for groups of six to 14 persons. Course time will vary according to student progress, but will average about 45 hours.

The nurses trained to teach the course include: Mrs. Lois Anderson, Bettendorf; Mrs. Ruth Anderson, Story City; Mrs. Emily Breckle, Sibley; Mrs. Mildred Eslick, Lehigh; Mrs. Maxine Hansen, Mason City; Mrs. Ida Mae Kuntz, Ridgeway; Mrs. Naomi Markel, Malvern; and Mrs. Sally Robinson, Clarinda.

Additional information is available from Mrs. Eva Hague, R.N., nursing care consultant, Iowa State Department of Health, State Office Building, Des Moines 19.

DISPOSE OF "DISPOSABLE" SYRINGES!

Notice has come to the State Department of Health that "disposable" syringes are falling into the hands of children, narcotic addicts and other people as a result of failures by doctors and other authorized personnel to destroy them. Several lawsuits regarding disposable syringes have already been filed.

Some pressure is being put upon manufacturers to include in each multiple syringe package a simple tool to facilitate destruction of the used syringe. In the meantime, physicians should instruct their working staffs to devise a method of their own for breaking the syringe and destroying the needles before they discard them.

UNIFORM STAMP FOR VACCINATION CERTIFICATES

On June 22, 1961, the U. S. Public Health Service notified all state and territorial health officers that a uniform type of stamp for authenticating International Certificates of Vaccination against smallpox and cholera will be adopted throughout the country. This newly-approved stamp is to replace all stamps now in use. The stamp illustrated here is the one for Creston, Union County, Iowa:

Official Vaccination
Iowa
14 175 240
U. S. A.

Throughout the 50 states, the first and last lines of the stamp will be the same. The second line in all instances will contain the name of the state. The third line will contain the numbers assigned to the state, county and city in the National Numerical Code. Accordingly, Iowa is 14, Union County is 175, and Creston is 240.

The new stamp is to be used by the local health officer, who must be a licensed physician, and it will be prepared and issued to him by the State Department of Health. All stamps antedating this new one are to become void.

Copies of this notification are being sent to all county medical societies and to all health officers. The new stamp will be issued to the local health officer upon his request addressed to the Iowa State Department of Health, State Office Building, Des Moines 19. Upon receipt of such application, together with a remittance of $2.00 (to cover the cost of the stamp), the device and proper identifying data will be sent.

ENDOCRINOLOGY AND METABOLISM

The Endocrine Society and the National Institutes of Health will present the Thirteenth Postgraduate Assembly in Endocrinology and Metabolism, in Bethesda, Maryland, on October 2-6, 1961. A comprehensive review of clinical problems in endocrinology will be presented and research activities in that area of medicine will be reviewed. The fee will be $100 for practicing physicians, and enrollment will be limited to 100.

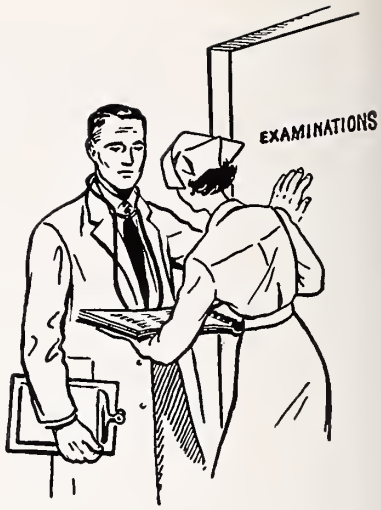
For further information, address Dr. Roy Hertz, National Institutes of Health, Building 10, Bethesda 14, Maryland.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

MORBIDITY REPORT FOR MONTH OF JUNE 1961

Disease	1961 June	1961 May	1960 June	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	94	223	159	Johnson
Typhoid fever	0	0	1	
Smallpox	0	0	0	
Measles	892	1227	282	Des Moines, Pottawattamie, Scott
Whooping cough	9	12	15	Polk, Pottawattamie
Brucellosis	17	18	23	Cerro Gordo, Dubuque, Polk, Scott
Chickenpox	269	693	423	Des Moines, Dubuque, Polk, Scott, Story
Meningococcic meningitis	0	1	1	
Mumps	287	743	645	Des Moines, Dubuque, Polk, Scott, Shelby
Poliomyelitis	0	0	4	
Infectious hepatitis	123	229	16	Boone, Lee, Polk, Pottawattamie, Scott, Woodbury
Rabies in animals	36	32	15	Cedar, Dallas, Emmet, Franklin, Hardin, Jones, Marshall
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	31	21	32	For the state
Syphilis	77	80	71	For the state
Gonorrhea	132	153	113	For the state
Histoplasmosis	2	12	0	Cherokee, Wapello
Food intoxication	0	0	0	
Meningitis (type unspecified)	2	1	2	Johnson, Pottawattamie
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	1	
Salmonellosis	4	5	5	Polk
Tetanus	0	1	0	
Chancroid	0	0	1	
Encephalitis (type unspecified)	0	0	2	
H. influenzal meningitis	1	1	0	Black Hawk
Amebiasis	3	1	0	Davis, Muscatine, Scott
Shigellosis	4	5	1	Black Hawk
Influenza	0	11	2	

THE DOCTOR'S BUSINESS



Professional Service Corporations

HOWARD D. BAKER
WATERLOO

One of the most revolutionary tax developments for professional people is beginning to materialize today. Although it is in its infancy and is bound to meet some severe tests, we predict that it will reach its maturity in the next two or three years. To us, this appears as the final and most logical chapter in the long and ridiculous story of the professional men's attempts to secure the same tax shelter that other people can enjoy.

For the past seven years, professional people have waged a relatively unsuccessful campaign with the Treasury Department to secure recognition of their right to form associations taxable as corporations. The reason for this back-door approach has been that professionals have traditionally been prohibited *by state laws* from practicing as corporations. Finally, in 1961, a couple of states recognized the obvious. Rather than force professional people to establish ersatz corporations to meet existing state laws, they agreed to *authorize* and *regulate* professional practice under a form of corporate organization.

In what appears to be a mass movement developing across the country, seven states have adopted professional service corporation laws, and similar proposals are pending in about 16 other states. As was the case when the Uniform Gifts to Minors Act started to roll, it is expected that the next three years will see the majority of states authorizing professional groups to practice as regulated corporations.

With the adoption of such laws, the Treasury will lose its stalling power in blocking important tax benefits to professional people. As the states adopt these new regulations, the Kintner-type association will probably fall by the wayside.

In the seven states (Arkansas, Georgia, Minnesota, Pennsylvania, South Dakota, Tennessee and Washington) that have thus far adopted the arrangement, the provisions are relatively simple. The basic differences between the "service" corporation and regular corporations are these: (1) Most states require a minimum of three stockholders. (2) *All* stockholders, officers and directors must be members of the profession for which the charter is granted. (3) Charters are renewable annually. (4) The corporation must carry the names of one or more shareholders, and cannot carry the name of any person not employed by the corporation unless that person has died within the current year.

Except for these special restrictions (which vary from state to state), these corporations have the same responsibilities, privileges and tax status as do commercial corporations.

We consider a change from individual to corporate practice a major one with far-reaching consequences, and regard it as a matter to be pondered long and carefully. However, after the experimental period has elapsed, as in the case of a new drug, we feel that this approach will have great possibilities. Indeed, we envision a day when a sizeable number of professional people will be practicing under a corporate form of organization.

To those of our firm's clients now practicing in partnerships in Minnesota and South Dakota, we are advising caution. People are starting to get on the "bandwagon," and some badly organized corporations may result. We are advising delay so that all attorneys and other advisors can become expert in the new form of organization. In other words, we are suggesting to them that they let others take the lead in this movement. Then after a period of time, they will be able to benefit from the trials and errors of the pioneers.

This technic is now a reality in several states, two of which border upon Iowa, but it will be worth while for physicians to take their time about adopting it.

Mr. Baker is a partner in Professional Management Midwest, and manager of its Retirement Planning Department. He majored in accounting and business administration at S.U.I., and was an agent of the U. S. Bureau of Internal Revenue for 3½ years before forming his present association in 1953.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

The thirty-eighth annual convention of the Woman's Auxiliary to the American Medical Association was held at the Roosevelt Hotel, New York City, June 26-29, 1961. I appreciated the privilege of serving as a delegate with Mrs. R. F. Nielsen, Cedar Falls, and Mrs. S. P. Leinbach, Belmond. Mrs. E. B. Dawson, Fort Dodge, was unable to attend, and Mrs. Wm. Chase, Jr., Des Moines, an alternate delegate, served in her place. Two other alternate delegates, Mrs. O. N. Glesne, Fort Dodge, and Mrs. J. McMillan, Fort Madison, were in New York City and attended some of the sessions. You will learn the highlights of the wonderful meeting from the delegates' reports that are published in this issue of the WOMAN'S AUXILIARY NEWS.

Every member should have the opportunity to attend a National Auxiliary convention so as to sense the true importance of our work, to feel the dynamic force of personalities from every state in the Union, including Hawaii, Alaska and Puerto Rico, and to realize that we, as Auxiliary members, have an important role to play in the future progress of our husbands' profession.

I wish to make special mention of the splendid project report that was given by our immediate past-president, Lillian Nielsen.

Mrs. Harlan English, our National Auxiliary president, presided at the Thursday morning session following the convention, which was intended especially for presidents-elect and presidents of state Auxiliaries. A special invitation to it had been extended to the chairmen of the state medical societies' Woman's Auxiliary Advisory Committees. The theme that Mrs. English has chosen for the National Auxiliary is "Speak Your Beliefs in Deeds." Our progress as Auxiliaries depends upon our right purpose, full knowledge, thoughtful planning and honest effort in the projects we undertake. You will be receiving information about the packaged programs from our program chairman, Mrs. L. V. Larsen, of Harlan. May I suggest to county presidents and program chairmen that as you plan your year's activities you should include some facet of the Auxiliary Projects as a portion of *each* program, so as to enlighten your members about the goals for 1961-1962.

Please accept my thanks and appreciation for the privilege of attending the National Auxiliary convention, and for the beautiful corsage I wore at the past-president's luncheon and the inaugural ball honoring Dr. Leonard W. Larson, the new president of the AMA.

—MRS. BENJ. F. KILGORE
President

REPORTS FROM IOWA DELEGATES TO THE NATIONAL AUXILIARY CONVENTION

The thirty-eighth annual convention of the Woman's Auxiliary to the American Medical Association opened in New York City on Monday morning, June 26, 1961. There was the usual hubbub and confusion that accompanies the opening of women's conventions, and a long line of Auxiliary members waiting to present their credentials, get their convention badges and pick up luncheon and tea tickets. Nevertheless, the convention was officially opened at nine o'clock with an invocation, followed by the pledge of loyalty to the Woman's Auxiliary, led by Mrs. Gastineau, a national past-president. After a series of greetings from various AMA and New York Medical Society personnel, we were warmly welcomed by Mrs. Milton W. Kogan, of New York. Mrs. Ivkovich, president of the Michigan Auxiliary, responded.

It was interesting to hear the assembled delegates respond to roll call. Each state's delegation had been assigned a specific area on the convention floor. The number of delegates from each state had been determined solely upon the size of the state's active membership. Pennsylvania with 19 and Ohio with 18 were the two largest that I noted. New York with 16 and Texas with 15 were next. Iowa had one of the smaller delegations—just four. However, I should like to point out that if all of our state dues had been received on or before March 1, we would have been entitled to one more delegate. Thus, if you would like to see Iowa represented by as large a delegation as possible next year, get those dues in ON TIME! Undoubtedly the most loudly acclaimed delegation was the one from Hawaii. Alaska had no delegates answering the roll call, but it does have an active Auxiliary, for its state report was presented later.

Nominations for the 1962 Nominating Commit-

tee were made from the floor. Our Lillian Nielsen nominated Mrs. Hegg, one of our state board members and a past-president, but we were later told that all nominees had to come from the delegate body itself, so Mrs. Hegg's name, of necessity, had to be withdrawn from consideration. Delegates were reminded that they must present their credentials cards before voting. It was announced that 183 voting delegates had registered by 9:30 that morning.

In her report, Mrs. Wm. Mackersie, the retiring president, spoke of the tapestry woven throughout the years by the combined efforts of the national and the state Auxiliaries. Our national membership is now 83,337, an increase of 1,219 members this past year. A new constituent Auxiliary has been formed in Puerto Rico. Mrs. Mackersie made a brief allusion to last winter's White House Conference on Aging. She referred to it, very cryptically, as a "disillusioning, enlightening and traumatic experience." She stated that BULLETIN subscriptions have increased, but that the board feels there still is much left to be desired here.

Mr. Leonard Martin, the AMA director of economic research, addressed the convention on "The Cost of Medical Care." It was an informative speech, but for someone who doesn't take shorthand, it was difficult to capture accurately. I can report some of his conclusions, however. The rise in overall medical care costs since 1934 has been *only slightly* larger than that of all other goods and services. Since 1951, however, hospital room rates and hospital insurance costs have risen the most. The rise in hospital insurance premiums has been due to (1) extended benefits and coverage; (2) over-utilization of hospital facilities and services; (3) a rise in the cost of the standard services offered. All of these are challenging statements and are well worth our pondering.

The BULLETIN's editorial writer and circulation chairman gave reports. Mrs. Gastineau reported on our work as liaison to the Student AMA Auxiliary. Mrs. Chenault, the rural health chairman, gave her annual report. She once again urged each Auxiliary president to appoint a rural health chairman. Rural health seems to be an area of endeavor within which we can all work to improve the doctor image so maligned in many sectors of our nation today.

An impressive memorial service honoring Auxiliary members who had died during the past year was presented under the direction of the president of the Kentucky State Auxiliary.

After luncheon, the delegates voted for new members of the Nominating Committee between 1:30 and 3:30, and afterwards they attended the beautiful tea honoring our president, Mrs. Mackersie, and our president-elect, Mrs. Harlan English, held in the Delegates' Dining Room at the United Nations. An hour's tour of the United Nation's Building was also available to all those who wished it. It was in this setting of dignity and beauty, and in this atmosphere of international purpose, that this large group of attractively dressed and gaily chatting women ended the first day of the Woman's Auxiliary convention.

—MILDRED LEINBACH

I was lucky, for the day on which I was to report was Tuesday. What a day! No two people reporting its events will give even vaguely similar accounts, though if they were to adhere strictly to repetitions of the generalities listed in the program, there would be dull agreement.

No convention program pictured the lovely silver pieces that were given as door prizes. (No one from Iowa was burdened ? with one of these.) No program forewarned the delegate of the lovely gold gift that was waiting at her place at luncheon. Other bonuses of a material sort were:

1. Meeting new and old friends
2. Copious notes
3. Seeing, feeling, touching MPF which is produced in Belmond, Iowa, Mrs. Leinbach's home town!
4. Much intellectual stimulation
5. Reports from all the states
6. $195,758 raised by the Auxiliary for AMEF
7. More stories for my "quips" book (Will share these with you).

Since our foremost concern is to keep America free, Mrs. Bushnell's speech, "Who Knows Better?" was the finest. Every effort will be made to reprint it in the WOMAN'S AUXILIARY NEWS. When you get it, read it to everyone who will listen—P.T.A., Women's Club, etc. Mrs. Neil Woodward spoke on "Food for Survival," briefing us very adequately on how we can stay alive and win the fight if we make survival plans.

"How Do You Project?" was the title of an address by Mr. T. A. Hendricks. He assured us that if we project well as individuals, we shall do well for our group. Our individual acts make our organization's reputation.

Dr. G. E. Gardner spoke on "Problems of Adolescents," profoundly simplifying a very difficult subject. He presented the problems of normal young people and how best to solve them.

"The Old Folks at Home" was a speech on safety by Dr. Cutter. It was a very palatable blend of lightness and seriousness. A pamphlet entitled "How to Protect the Elderly" is available, and you can have a copy by sending a request for it to 425 North Michigan Avenue, Chicago 11.

"The AMA and the Nursing Profession," by Veronica Conley, was an address that impelled the delegates to give new emphasis to the health-careers recruitment programs.

If any member wishes a more detailed report on any particular one of the presentations that I have sketched, she needs only to drop me a line.

Thank you for the splendid opportunity of representing you in New York.

—LILLIAN NIELSEN

On Wednesday, the reports of the eastern states were given. That region has a high percentage of organization. Of interest were accident prevention schools in Maryland, diabetic surveys in Vermont, and four homemaker services in a rural area of New Hampshire. The Auxiliary shared responsibility in each of these projects.

There were 1,137 registered at the convention.

Miss Wolfe reported five full-time staff members working for the Auxiliary at the AMA headquarters.

There were no major changes made in the constitution and by-laws. A Texas resolution to make all state presidents members of the National Board, and a North Dakota resolution to include a BULLETIN subscription in each member's annual dues were voted down.

The following national officers were elected: Mrs. Wm. C. Thuss, Alabama, president-elect; Mrs. Paul E. Rauschenback, New Jersey, first vice-president; Mrs. C. Rodney Stoltz, South Dakota, North Central regional vice-president; Mrs. Wm. H. Evans, Ohio, constitutional secretary; and Mrs. C. R. Pearson, Wisconsin, treasurer.

Mrs. Harlan English, in her inaugural address, urged us to have courage to do right. The world is not so much in need of new thought, she said, as of a reexamination of our purposes and direction. Our Auxiliary program should meet a "need" test. Does it concern current legislation, new thinking, or projects that can be communicated to other groups? Planning is a leadership obligation. Our success depends upon communication with others. Enthusiasm can be the difference between success and failure. Charm is a woman's strength, and it can be enhanced by emotional maturity. Two tests of maturity are whether you can keep a secret and whether you can occasionally admit a mistaken opinion. Federal planning cannot compete with freedom. This is not one big problem, but thousands of small problems.

—MRS. WM. B. CHASE, JR.

Clay County

Many of the seniors in the Spencer Future Nurses' Club have decided upon paramedical careers. Here is a partial list. Katherine Clausen and Beverly Elston are entering St. Joseph's, and Ellen Sommers is entering St. Vincent's School of Nursing, in Sioux City. Mary Gilchrist is to take the pre-nursing curriculum at Buena Vista College. Judy Frank is to study speech therapy at St. Charles, Missouri. She made her choice after the spring visit to the Omaha schools of nursing and to the new Children's Rehabilitation Center. Sue Hatten is to study medical technology at Drake University.

HEALTH EDUCATION LOAN FUND

The Health Education Loan Fund is an important part of the careers-recruitment program of the Auxiliary. Through the establishment of Future Nurse Clubs in high schools and through the efforts of individual doctors' wives, many of whom are nurses, we have introduced the opportunities in health service careers to high school students and their parents. The need for trained medical and paramedical personnel is great, and the possibilities that these occupations offer for benefiting mankind are unlimited, but talented youngsters, in many instances, need financial help if they are to get the requisite training.

Several years ago, the Auxiliary established an educational loan fund so that it might do its part toward removing financial obstacles from their path. The loan fund is supported by voluntary contributions of at least 50 cents per Auxiliary member, and by many memorial and gift contributions. During each of the past six years, a dance for the benefit of the loan fund has been conducted by the Auxiliary at the time of the IMS annual meeting. These dances have been financial as well as social successes, and all of the proceeds from them have been used by the loan fund.

To qualify for a loan, an applicant must have made a good scholastic record in high school, must have good character recommendations, and must have been accepted by an accredited training school. The applicant must accept the terms of the loan and must sign the promissory note. Interest on the loan is at the rate of six per cent, but it isn't charged until six months after the student's graduation. He or she is expected to start repayment of the loan in monthly installments at that time.

Usually, the loans are granted to students who are entering Iowa schools, but exceptions have been made. At the present time, two girls are in Omaha schools of nursing, and one student is attending a school for laboratory technicians in Minneapolis. For the first time this year, the Loan Fund Committee has granted a loan to a young man who wishes to become a nurse. He will enter a school in St. Louis in September.

Since its inception, the loan fund has helped 46 young people receive an education in health fields, and there are several new applications under consideration.

Because virtually all moneys available for this year have already been committed, and because some highly promising candidates haven't been granted loans, additional contributions either as memorials or simply as gifts will be cordially welcomed.

MRS. H. C. MERILLAT, *Chairman*
Health Education Loan Fund Committee

MEDICINE'S COUNTERPART—THE WOMAN'S AUXILIARY*

Webster defines *counterpart* as designating anything that closely resembles something else, as the right hand resembles the left. I shall try to show you how the Woman's Auxiliary to the Iowa Medical Society fulfills that role.

You senior medical students who are attending this meeting must have a feeling of accomplishment, memories of tasks well done, and a consciousness that much remains to be done in the future. You are here today because you had an opportunity to *choose* your life's work. You inherited that freedom from men who fought for it long ago, and it is your privilege to preserve that freedom. Opportunity is the glorious aspect of freedom. We members of the Woman's Auxiliary share that privilege and obligation with you and with the men who have been parts of the medical profession for greater lengths of time than you have. Indeed, Mrs. William Mackersie, president of the Woman's Auxiliary to the American Medical Association, chose as the theme of the organization this year, "Preserve and Enhance the Heritage of American Medicine." It is a priceless heritage, and we must not let it be wrenched from our grip by false ideologies foreign to the concept of American democracy. We must pass it on to those who will follow after us with added lustre and value. Sir William Osler said, "We are not here to take from life, but to give to life."

The wives of all physicians who are members in good standing of the Iowa Medical Society are eligible for membership in the Auxiliary. We consider it a rare privilege to have such an organization, and we should like to think that all wives of physicians are willing and eager to affiliate with it, the only organization open to them where the sole objective is the advancement of the aims of the medical profession.

The work of the Auxiliary is not entirely new to you young men and women, for here in Iowa City you have the Woman's Auxiliary to the Student American Medical Association, known as WA/SAMA. I have been glad to learn how many women belong to that student organization. This is the basic structure that will initiate you to the work of the Auxiliary. We are proud that you have formed such a group.

In Iowa we have 41 county Auxiliaries, but we have much organizational work left to do. We hope eventually that every one of the medical societies in the other counties will encourage the members' wives to form an Auxiliary.

Your days ahead will be filled with both opportunity and responsibility. National opinion toward the physician and toward medical care generally is the sum total of public attitudes at the grass-roots level—of attitudes in your respective communities. The opinions and attitudes of your neighbors and friends in your home towns provide the Gallup rating of the medical profession. What that rating is to be is largely up to you, for it is you, in a combined sense, who help immeasurably to mold right opinions and attitudes.

The Woman's Auxiliary's responsibility is determined by its parent body, the American Medical Association, and its projects change and evolve according to the needs of that organization. At present, the Auxiliary has committees on mental health, on legislation, on the American Medical Education Foundation, on health careers recruitment, on Health Educational Loan Fund, on rural health, on community service, on Civil Defense, and on safety.

The AMEF ranked high among our projects this year. The Auxiliary contributed about $2,000 to that Fund this year. The money came from projects and programs planned by the individual county Auxiliaries. Polk County raised a total of $1,586.30, and of that amount it specified that $1,529.30 should go to your medical school. You should receive this check sometime in July, Dean Nelson. How do you rate Auxiliary work after hearing of this one accomplishment?

Other varied and interesting programs permit each member to make her best contribution to her husband's welfare, to the benefit of his profession and to the well being of her community.

You young men will become members of county medical societies wherever you choose to live. Encourage your wives to belong to the Auxiliary so that they may help to extend the aims of the medical profession to all organizations which look to the advancement of health education, so that they may help cultivate friendly relations and promote mutual understanding among physicians' families, and so that they may participate in Auxiliary projects, ones endorsed by the American Medical Association.

We should like to be true teammates of the men of medicine by serving as medicine's counterpart.

* Mrs. Kilgore gave this address in Iowa City at the Seventh Annual IMS Senior Student Conference, May 13, 1961.

WOMAN'S AUXILIARY TO THE IOWA MEDICAL SOCIETY

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